Ref. Certif. No.

US/13965A/UL

IEC SYSTEM FOR CONFORMITY TESTING AND CERTIFICATION OF ELECTRICAL EQUIPMENT (IECEE) CB SCHEME

SYSTEME CEI D'ESSAIS DE CONFORMITE ET DE CERTIFICATION DES EQUIPEMENTS ELECTRIQUES (IECEE) METHODE OC

CB TEST CERTIFICATE
CERTIFICAT D'ESSAI OC

Product
Produit

Server

Name and address of the applicant
Nom et adresse du demandeur

Super Micro Computer Inc
980 Rock Ave
San Jose, CA 95131, USA

Name and address of the manufacturer
Nom et adresse du fabricant

Super Micro Computer Inc
980 Rock Ave
San Jose, CA 95131, USA

Name and address of the factory
Nom et adresse de l'usine

Super Micro Computer Inc
980 Rock Ave
San Jose, CA 95131, USA

Rating and principal characteristics
Valeurs nominales et caractéristiques principales

Model 745-8: 100-240 V, 60-50 Hz., 10-4 A
Model 745-12: 100-240 V, 60-50 Hz., 11.5-5.5 A

Trademark (if any)
Marque de fabrique (si elle existe)

SUPER or SUPERMICRO

Model / Type Ref.
Ref. de type

745-8, 745-12

Additional information (if necessary)
Information complémentaire (si nécessaire)

The CB Test Report comprises 5 enclosures. The CB Test Certificate and Report were corrected to modify input ratings and critical components.

A sample of the product was tested and found to be in conformity with
Un échantillon de ce produit a été essayé et a été considéré conforme à la

PUBLICATION **EDITION**

IEC 60950-1 (2001) First Edition
Additionally evaluated to EN 60950-1 (2001) to include Group and National Differences for European countries; other National Differences also specified in the CB Test Report.

as shown in the Test Report Ref. No.
which forms part of this Certificate
comme indiqué dans le Rapport d'essais numéro de référence qui constitue partie de ce Certificat

E209323-A50-CB-1

This CB Test Certificate is issued by the National Certification Body
Ce Certificat d'essai OC est établi par l'Organisme National de Certification

Underwriters Laboratories

Underwriters Laboratories Inc. / Certification Programs Office, USA
333 Pfingsten Road, Northbrook, IL 60062-2096
United States of America
TEL INT* +1 847 664 3008, FAX INT* +1 847 313 3008
email: jolanta.m.wroblewska@us.ul.com

Date: Issued: 2009 June 16
Corrected: 2009 August 12

Signature:

Jolanta M. Wroblewska

COVER PAGE FOR TEST REPORT

Test Item Description:	Server
Model/Type Reference:	745-8, 745-12
Rating(s):	Model 745-8: 100-240 V, 60-50 Hz., 10-4 A Model 745-12: 100-240 V, 60-50 Hz., 11.5-5.5 A
Standards:	IEC 60950-1:2001, First Edition
Applicant Name and Address:	SUPER MICRO COMPUTER INC 980 ROCK AVE SAN JOSE CA 95131 UNITED STATES
Factory Location(s):	SUPER MICRO COMPUTER INC 980 ROCK AVE SAN JOSE CA 95131 UNITED STATES

This Report includes the following parts, in addition to this cover page:

1. Specific Technical Criteria
2. Critical Components

The original report was modified on 2009-08-11 to include the following changes/additions:
1. Corrected the rating from 11-5.5 A to 11.5-5.5 A to Model 745-12 to Cover Page
2. Corrected the rating Input from 11-7.5 A to 11.5-8 A; DC output from 12 V/74 A to 12 V/83 A, from 900 W to 1000 W, and Input from 8-5 A to 8-5.5 A for 1200 W to alternate Power Supply, (Type PWS-1K21P-1R by Compuware Technology Inc.) to Critical Component List.

All applicable tests according to the above standard(s) have been carried out.
Test results are valid only for the tested equipment.
This Test Report can be reproduced only in whole.
Amendments and corrections can be reproduced only with the original CB Test Report.
Written permission from Underwriters Laboratories Inc. is required if the test report is copied in part.

Copyright © 2002Underwriters Laboratories Inc.

Test Report issued under the responsibility of:

Underwriters Laboratories Inc.

TEST REPORT
IEC 60950-1,First Edition
Information technology equipment-Safety
Part 1:General Requirements

Report Reference No ..... :	E209323-A50-CB-1
Date of issue ..... :	2009-06-16
Total number of pages ..... :	11
CB Testing Laboratory ..... :	Underwriters Laboratories Inc.
Address ..... :	455 E. Trimble Rd., San Jose, CA, 95131-1230, USA
Applicant's name ..... :	SUPER MICRO COMPUTER INC
Address ..... :	980 ROCK AVE SAN JOSE CA 95131 UNITED STATES
Test specification:	
Standard ..... :	IEC 60950-1:2001, First Edition
Test procedure ..... :	CB Scheme
Non-standard test method ..... :	N/A
Test Report Form No. ..... :	IEC60950_1B
Test Report Form originator ..... :	SGS Fimko Ltd
Master TRF ..... :	dated 2003-03

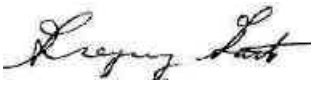
Copyright © 2005 IEC System for Conformity Testing and Certification of Electrical Equipment (IECEE), Geneva, Switzerland. All rights reserved.

This publication may be reproduced in whole or in part for non-commercial purposes as long as the IECEE is acknowledged as copyright owner and source of the material. IECEE takes no responsibility for and will not assume liability for damages resulting from the reader's interpretation of the reproduced material due to its placement and context.

If this test Report is used by non-IECEE members, the IECEE/IEC logo shall be removed.

This report is not valid as a CB Test Report unless signed by an approved CB Testing Laboratory and appended to a CB Test Certificate issued by an NCB in accordance with IECEE 02.

Test item description ..... :	Server
Trade Mark ..... :	SUPER● or SUPERMICR●
Model/Type reference ..... :	745-8, 745-12
Manufacturer ..... :	SUPER MICRO COMPUTER INC 980 ROCK AVE SAN JOSE CA 95131 UNITED STATES
Rating ..... :	Model 745-8: 100-240 V, 60-50 Hz., 10-4 A Model 745-12: 100-240 V, 60-50 Hz., 11.5-5.5 A

Testing procedure and testing location:			
[x]	**CB Testing Laboratory**		
	Testing location / address..... :	Underwriters Laboratories Inc. 455 E. Trimble Rd., San Jose, CA, 95131-1230, USA	
[ ]	**Associated CB Test Laboratory**		
	Testing location / address..... :		
	Tested by (name + signature) ..... :	Greg Gatt	
	Approved by (+ signature) ..... :	Kevin F. Tang	
[ ]	**Testing Procedure: TMP**		
	Tested by (name + signature) ..... :		
	Approved by (+ signature) ..... :		
	Testing location / address..... :		
[ ]	**Testing Procedure: WMT**		
	Tested by (name + signature) ..... :		
	Witnessed by (+ signature)..... :		
	Approved by (+ signature) ..... :		
	Testing location / address..... :		
[ ]	**Testing Procedure: SMT**		
	Tested by (name + signature) ..... :		
	Approved by (+ signature) ..... :		
	Supervised by (+ signature) ..... :		
	Testing location / address..... :		
[ ]	**Testing Procedure: RMT**		
	Tested by (name + signature) ..... :		
	Approved by (+ signature) ..... :		
	Supervised by (+ signature) ..... :		
	Testing location / address..... :		

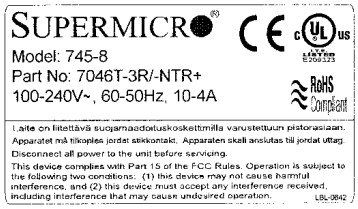
Summary of Testing:

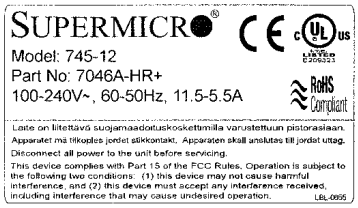
No tests were conducted

Summary of Compliance with National Differences:

AR, AT, AU, BE, CA, CH, CN, CZ, DE, DK, ES, EU, FI, FR, GB, GR, HU, IE, IL, IN, IT, JP, KE, KR, MY, NL, NO, NZ, PL, PT, SE, SG, SI, SK, US

Copy of Marking Plate


SUPERMICRO
Model: 745-8
Part No: 7046T-3R/-NTR+
100-240V~, 60-50Hz, 10-4A
RoHS Compliant
Laite on liitettävä suojamaadoituskoskettimilla varustettuun pistorasiaan.
Apparatet må tilkoples jordet stikkontakt. Apparaten skall anslutas till jordat uttag.
Disconnect all power to the unit before servicing.
This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.
LBL-0842


SUPERMICRO
Model: 745-12
Part No: 7046A-HR+
100-240V~, 60-50Hz, 11.5-5.5A
RoHS Compliant
Laite on liitettävä suojamaadoituskoskettimilla varustettuun pistorasiaan.
Apparatet må tilkoples jordet stikkontakt. Apparaten skall anslutas till jordat uttag.
Disconnect all power to the unit before servicing.
This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.
LBL-0995

Test item particulars :	
Equipment mobility ..... :	movable
Operating condition ..... :	continuous
Mains supply tolerance (%) ..... :	+10%, -10%
Tested for IT power systems ..... :	Yes
IT testing, phase-phase voltage (V) ..... :	230 V
Class of equipment ..... :	Class I (earthed)
Mass of equipment (kg) ..... :	26.0 kg.
Protection against ingress of water ..... :	IP X0
Possible test case verdicts:	
- test case does not apply to the test object ..... :	N / A
- test object does meet the requirement ..... :	P(Pass)
- test object does not meet the requirement ..... :	F(Fail)
Testing:	
Date(s) of receipt of test item ..... :	N/A
Date(s) of Performance of tests ..... :	N/A

General remarks:

The test results presented in this report relate only to the object tested.
This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory.

"(see Enclosure #)" refers to additional information appended to the report.
"(see appended table)" refers to a table appended to the report.

Throughout this report a point is used as the decimal separator.

Refer to the Cover Page For Test Report for a list of all Factory Locations.

GENERAL PRODUCT INFORMATION:

Report Summary

The original report was modified on 2009-08-11 to include the following changes/additions:
1. Corrected the rating from 11-5.5 A to 11.5-5.5 A to Model 745-12 to Cover Page
2. Corrected the rating Input from 11-7.5 A to 11.5-8 A; DC output from 12 V/74 A to 12 V/83 A, from 900 W to 1000 W, and Input from 8-5 A to 8-5.5 A for 1200 W to alternate Power Supply, (Type PWS-1K21P-1R by Compuware Technology Inc.) to Critical Component List.

Product Description

The equipment is a tower type server in a metal chassis. All primary, AC circuits are contained within the separate enclosure of the separately certified power supplies. The equipment has no connection to TNV networks. The inside of the equipment is for access by trained service persons only. The equipment can operate on one power supply; the second power supply is redundant. Each AC Input is for connection to a

separate branch circuit. The electrical ratings are per each AC Inlet.

Model Differences

All models are similar except for the alternate power supplies and alternate motherboards described in this report, and minor cosmetic differences and/or differences in software, and/or minor differences in SELV logic circuits.

Additional Information

Some of the attached component Licenses are greater than 3 years old, an accepting NCB may request updated Licenses for these components.

The CB Certificates for the Power Supplies are provided as an attachment in this Report; the manufacturer will provide the complete CB Report upon request from the accepting NCB.

Technical Considerations

The product was submitted and evaluated for use at the maximum ambient temperature (Tma) permitted by the manufacturer's specification of: 40 °C

The means of connection to the mains supply is: Pluggable A

The product is intended for use on the following power systems: TN, IT (Norway)

The equipment disconnect device is considered to be: Appliance Inlet

The class of laser product is: Incorporates previously certified Class 1 laser source (CD/DVD drive)

The product was investigated to the following additional standards: EN 60950-1:2001 + A11:2004 (which includes all European national differences, including those specified in this test report).

The following circuit locations (with circuit/schematic designation) were investigated as a limited power source (LPS): All external I/O connectors

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

1.5.1	**TABLE: list of critical components**				Pass
object/part No.	manufacturer/ trademark	type/model	technical data	standard	mark(s) of conformity[1])
Chassis / Enclosure (mech/elec/fire)	-	-	Metal, minimum thickness, 0.8mm. (overall dimensions 550mm by 435mm by 178mm)	-	-, -
Nameplate Label material	BRADLEY NAMEPLATE CORP	White Thermal Mylar	Min. 80ºC, for application to metal.	UL969	UL, -
Power Supply	ABLECOM TECHNOLOGY INC	PWS-801-1R	Input: 100-240V 50-60Hz, 10-4A. dc Outputs: +12V/66A; +5V/18A +5Vsb/4A	UL60950-1 IEC60950-1 EN60950-1	UL, TUV
Power Supply, alternate	COMPUWARE TECHNOLOGY INC	PWS-1K21P-1R	Input: 100-140V 11.5-8A 50-60Hz. dc Outputs: +12V/83A +5Vsb/4A 1000W; Input: 180-240V 8-5.5A 50-60Hz, dc Outputs: +12V/100A +5Vsb/4A 1200W	UL60950-1 IEC60950-1 EN60950-1	UL, TUV
Rear External Ventilation Fans, two provided.	SANYO DENKI CO LTD	SAN ACE 80, Model 9G0812P1F09	12Vdc, 0.58A (68.2CFM)	UL508 EN 60950-1	UL, VDE
Rear External Ventilation Fans, alternate, two provided.	SANYO DENKI CO LTD	9G0812P1F03	12Vdc, 0.58A (68.2CFM)	UL508 EN 60950-1	UL, TUV
External Rear Fan Guard /	CHI MEI CORP	PA-765B	V-0, minimum 2.5mm thickness	UL94 UL60950-1	UL, -

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

Frame Assembly, two provided					
Mid-Chassis Ventilation Fans, optional, up to three provided	SANYO DENKI CO LTD	SAN ACE 80, Model 9G0812P1F09	12Vdc, 0.58A (68.2CFM)	UL508 EN 60950-1	UL, VDE
Mid-Chassis Ventilation Fans, optional, alternate, up to three provided	SANYO DENKI CO LTD	9G0812P1F03	12Vdc, 0.58A (68.2CFM)	UL508 EN 60950-1	UL, TUV
CPU fan (optional)	NIDEC AMERICA CORP	T92T12MHA7	12Vdc 0.14A (39.9CFM)	UL508 EN 60950-1	UL, TUV
Motherboard, Super Micro Computer, Model X8 or H8 series	various	various	Min V-1; Min.105 ºC	UL60950-1 IEC60950-1	UL, -
PTC Thermistors, for VGA, Mouse, Keyboard, and USB ports. Note: PTC circuit designations may vary between motherboards within the series, however protection circuits are the same.	BOURNS INC	MF-MSMF150	6Vdc, 3A trip current.	EN60730-1	UL, TUV
PTC Thermistors, alternate, for VGA, Mouse, Keyboard, and USB ports. Note: PTC circuit designations may vary between motherboards within the series, however	TYCO ELECTRONICS CORP	miniSMDC150	6Vdc, 3A trip current.	EN60730-1	UL, TUV

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

protection circuits are the same.					
Lithium Battery Protection Circuit Note: Resistor and diode circuit designations may vary between motherboards within the series, however protection circuits are the same.	-	-	Resistor, 1kOhm, and Diode in series.	-	-, -
Lithium Battery	SONY ENERGY DEVICES CORP	CR2032	3 V, maximum 10mA reverse current.	UL1642, IEC60950-1	UL, -
Lithium Battery, alternate	VARTA MICROBATTERY	CR2032	3 V, maximum 5mA reverse current.	UL1642, IEC60950-1	UL, -
Lithium Battery, alternate	PANASONIC CORPORATION, PANASONIC*CORPORATION OF NORTH AMERICA	CR2032	3 V, maximum 5mA reverse current.	UL1642, IEC60950-1	UL, -
Lithium Battery, alternate	HITACHI MAXELL LTD	CR2032	3 V, maximum 10mA reverse current.	UL1642, IEC60950-1	UL, -
Lithium Battery, alternate	MITSUBISHI ELECTRIC CORP	CR2032	3 V, maximum 10mA reverse current.	UL1642, IEC60950-1	UL, -
Lithium Battery, alternate	FDK ENERGY CO LTD	CR2032	3 V, maximum 10mA reverse current.	UL1642, IEC60950-1	UL, -
Printed Circuit Boards (SELV)	various	various	Min V-1; Min.105 ºC	UL796	UL, -
Hard Disk Drive, optional, one to eight provided	SEAGATE TECHNOLOGY L L C	9CA154-302, Barracuda ES2	5Vdc/0.65A12Vdc/0.42A	UL60950-1 IEC60950-1	UL, TUV
Front Bezel for Hard Disk Drives	various	various	Min. HB, Min. 80 C.	UL94 UL60950-1	UL, -
CD/DVD Drive, optional, up to two provided.	PANASONIC CORPORATION, PANASONIC	UJDA710	5Vdc/1.8A Class 1 Laser Product	UL60950-1 EN60950-1 EN60825-1	UL, TUV,

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

	CORPORATION OF NORTH AMERICA				
Floppy Disk Drive, optional	TEAC CORP	FD-05XYYY	5V, 0.8A max.	UL60950-1	UL, -
CPU Air Guide, Empty Disk Drive Tray, Internal Card Brackets, Cover for Power Supply Output Board	various	various	Min. V-2, Min. 80 C.	UL94 UL60950-1	UL, -
Empty Disk Drive Tray	various	various	Min. V-2, Min. 80 C.	UL94 UL60950-1	UL, -
Front Bezels for Disk Drive Trays, Front Disk Drive Door, Plastic Mesh/Frame behind front disk drive door, Top Panel	various	various	Min. HB, Min. 80 C.	UL94 UL60950-1	UL, -
Feet, Bottom of Chassis, Four Provided	various	various	5VB, secured by snap fit and screw to chassis bottom.	UL94 UL60950-1	UL, -
Barrier Sheet, located on chassis bottom, covering bottom openings.	SABIC INNOVATIVE PLASTICS US L L C (E61257)	FR65	VTM-0, 80 C, minimum thickness 0.2mm, covers bottom openings in chassis.	UL94, UL60950-1	UL, -
Barrier Sheet, alternate, located on chassis bottom, covering bottom openings.	SABIC INNOVATIVE PLASTICS US L L C (E61257)	FR700	VTM-0, 80 C, minimum thickness 0.254mm, covers bottom openings in chassis.	UL94, UL60950-1	UL, -
[1]) an asterisk indicates a mark which assures the agreed level of surveillance					

Ref. Certif. No.

US/13965/UL

IEC SYSTEM FOR CONFORMITY TESTING AND CERTIFICATION OF ELECTRICAL EQUIPMENT (IECEE) CB SCHEME

SYSTEME CEI D'ESSAIS DE CONFORMITE ET DE CERTIFICATION DES EQUIPEMENTS ELECTRIQUES (IECEE) METHODE OC

CB TEST CERTIFICATE
CERTIFICAT D'ESSAI OC

Product
Produit

Server

Name and address of the applicant
Nom et adresse du demandeur

Super Micro Computer Inc
980 Rock Ave
San Jose, CA 95131, USA

Name and address of the manufacturer
Nom et adresse du fabricant

Super Micro Computer Inc
980 Rock Ave
San Jose, CA 95131, USA

Name and address of the factory
Nom et adresse de l'usine

Super Micro Computer Inc
980 Rock Ave
San Jose, CA 95131, USA

Rating and principal characteristics
Valeurs nominales et caractéristiques principales

Model 745-8: 100-240 V, 60-50 Hz., 10-4 A
Model 745-12: 100-240 V, 60-50 Hz., 11-5.5 A

Trademark (if any)
Marque de fabrique (si elle existe)

SUPER or SUPERMICRO

Model / Type Ref.
Ref. de type

745-8, 745-12

Additional information (if necessary)
Information complémentaire (si nécessaire)

The CB Test Report comprises 5 enclosures.

A sample of the product was tested and found to be in conformity with
Un échantillon de ce produit a été essayé et a été considéré conforme à la

PUBLICATION **EDITION**

IEC 60950-1 (2001) First Edition
Additionally evaluated to EN 60950-1 (2001) to include Group and National Differences for European countries; other National Differences also specified in the CB Test Report.

as shown in the Test Report Ref. No.
which forms part of this Certificate
comme indiqué dans le Rapport d'essais numéro de référence qui constitue partie de ce Certificat

E209323-A50-CB-1

This CB Test Certificate is issued by the National Certification Body
Ce Certificat d'essai OC est établi par l'Organisme National de Certification

Underwriters Laboratories

Underwriters Laboratories Inc. / Certification Programs Office, USA
333 Pfingsten Road, Northbrook, IL 60062-2096
United States of America
TEL INT* +1 847 664 3008, FAX INT* +1 847 313 3008
email: jolanta.m.wroblewska@us.ul.com

Date:
Issued: 2009 June 16

Signature:

Jolanta M. Wroblewska

COVER PAGE FOR TEST REPORT

Test Item Description:	Server
Model/Type Reference:	745-8, 745-12
Rating(s):	Model 745-8: 100-240 V, 60-50 Hz., 10-4 A Model 745-12: 100-240 V, 60-50 Hz., 11-5.5 A
Standards:	IEC 60950-1:2001, First Edition
Applicant Name and Address:	SUPER MICRO COMPUTER INC 980 ROCK AVE SAN JOSE CA 95131 UNITED STATES
Factory Location(s):	SUPER MICRO COMPUTER INC 980 ROCK AVE SAN JOSE CA 95131 UNITED STATES

This Report includes the following parts, in addition to this cover page:

1. Specific Technical Criteria
2. Clause Verdicts
3. Critical Components
4. Test Results
5. Enclosures
    a. National Differences
    b. Photographs
    c. Manuals
    d. Miscellaneous
    e. Licenses

All applicable tests according to the above standard(s) have been carried out.
Test results are valid only for the tested equipment.
This Test Report can be reproduced only in whole.
Amendments and corrections can be reproduced only with the original CB Test Report.
Written permission from Underwriters Laboratories Inc. is required if the test report is copied in part.

Copyright © 2002Underwriters Laboratories Inc.

Test Report issued under the responsibility of:

Underwriters Laboratories Inc.

TEST REPORT
IEC 60950-1,First Edition
Information technology equipment-Safety
Part 1:General Requirements

Report Reference No ..... :	E209323-A50-CB-1
Date of issue ..... :	2009-06-16
Total number of pages ..... :	48
CB Testing Laboratory ..... :	Underwriters Laboratories Inc.
Address ..... :	455 E. Trimble Rd., San Jose, CA, 95131-1230, USA
Applicant's name ..... :	SUPER MICRO COMPUTER INC
Address ..... :	980 ROCK AVE SAN JOSE CA 95131 UNITED STATES
Test specification:	
Standard ..... :	IEC 60950-1:2001, First Edition
Test procedure ..... :	CB Scheme
Non-standard test method ..... :	N/A
Test Report Form No. ..... :	IEC60950_1B
Test Report Form originator ..... :	SGS Fimko Ltd
Master TRF ..... :	dated 2003-03

Copyright © 2005 IEC System for Conformity Testing and Certification of Electrical Equipment (IECEE), Geneva, Switzerland. All rights reserved.

This publication may be reproduced in whole or in part for non-commercial purposes as long as the IECEE is acknowledged as copyright owner and source of the material. IECEE takes no responsibility for and will not assume liability for damages resulting from the reader's interpretation of the reproduced material due to its placement and context.

If this test Report is used by non-IECEE members, the IECEE/IEC logo shall be removed.

This report is not valid as a CB Test Report unless signed by an approved CB Testing Laboratory and appended to a CB Test Certificate issued by an NCB in accordance with IECEE 02.

Test item description ..... :	Server
Trade Mark ..... :	SUPER or SUPERMICRO
Model/Type reference ..... :	745-8, 745-12
Manufacturer ..... :	SUPER MICRO COMPUTER INC 980 ROCK AVE SAN JOSE CA 95131 UNITED STATES
Rating ..... :	Model 745-8: 100-240 V, 60-50 Hz., 10-4 A Model 745-12: 100-240 V, 60-50 Hz., 11-5.5 A

Testing procedure and testing location:			
[x]	**CB Testing Laboratory**		
	Testing location / address..... :	Underwriters Laboratories Inc. 455 E. Trimble Rd., San Jose, CA, 95131-1230, USA	
[ ]	**Associated CB Test Laboratory**		
	Testing location / address..... :		
	Tested by (name + signature) ..... :	Jerry Dikun	
	Approved by (+ signature) ..... :	Kevin Tang	
[ ]	**Testing Procedure: TMP**		
	Tested by (name + signature) ..... :		
	Approved by (+ signature) ..... :		
	Testing location / address..... :		
[ ]	**Testing Procedure: WMT**		
	Tested by (name + signature) ..... :		
	Witnessed by (+ signature)..... :		
	Approved by (+ signature) ..... :		
	Testing location / address..... :		
[ ]	**Testing Procedure: SMT**		
	Tested by (name + signature) ..... :		
	Approved by (+ signature) ..... :		
	Supervised by (+ signature) ..... :		
	Testing location / address..... :		
[ ]	**Testing Procedure: RMT**		
	Tested by (name + signature) ..... :		
	Approved by (+ signature) ..... :		
	Supervised by (+ signature) ..... :		
	Testing location / address..... :		

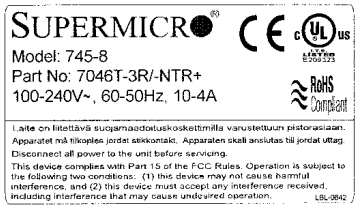
Summary of Testing:
Unless otherwise indicated, all tests were conducted at Underwriters Laboratories Inc. 455 E. Trimble Rd., San Jose, CA, 95131-1230, USA.

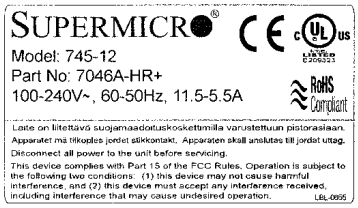
Tests performed (name of test and test clause)	Testing location / Comments
End Product Reference Page	
Input: Single-Phase (1.6.2)	
Durability of Marking (1.7.13)	
Limited Power Source Measurements (2.5)	
Stability (4.1)	
Connector Current Interruption (4.3.5)	
Heating (4.5.1, 1.4.12, 1.4.13)	
Electric Strength (5.2.2)	
Abnormal Operation (5.3.1 - 5.3.8.2)	
125 mm Flame Test/20 mm Flame (Annex A.1, A.2)	

Summary of Compliance with National Differences:

AR, AT, AU, BE, CA, CH, CN, CZ, DE, DK, ES, EU, FI, FR, GB, GR, HU, IE, IL, IN, IT, JP, KE, KR, MY, NL, NO, NZ, PL, PT, SE, SG, SI, SK, US

Copy of Marking Plate


SUPERMICRO
Model: 745-8
Part No: 7046T-3R/-NTR+
100-240V~, 60-50Hz, 10-4A
RoHS Compliant
Laite on liitettävä suojamaadoituskoskettimilla varustettuun pistorasiaan.
Apparatet må tilkoples jordet stikkontakt. Apparaten skall anslutas till jordat uttag.
Disconnect all power to the unit before servicing.
This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.
LBL-0842


SUPERMICRO
Model: 745-12
Part No: 7046A-HR+
100-240V~, 60-50Hz, 11.5-5.5A
RoHS Compliant
Laite on liitettävä suojamaadoituskoskettimilla varustettuun pistorasiaan.
Apparatet må tilkoples jordet stikkontakt. Apparaten skall anslutas till jordat uttag.
Disconnect all power to the unit before servicing.
This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.
LBL-0995

Test item particulars :	
Equipment mobility ..... :	movable
Operating condition ..... :	continuous
Mains supply tolerance (%) ..... :	+10%, -10%
Tested for IT power systems ..... :	Yes
IT testing, phase-phase voltage (V) ..... :	230 V
Class of equipment ..... :	Class I (earthed)
Mass of equipment (kg) ..... :	26.0 kg.
Protection against ingress of water ..... :	IP X0
Possible test case verdicts:	
- test case does not apply to the test object ..... :	N / A
- test object does meet the requirement ..... :	P(Pass)
- test object does not meet the requirement ..... :	F(Fail)
Testing:	
Date(s) of receipt of test item ..... :	2009-04-10
Date(s) of Performance of tests ..... :	2009-04-24, 2009-04-28, 2009-04-29, 2009-04-30, 2009-05-04, 2009-05-05, 2007-02-26

General remarks:

The test results presented in this report relate only to the object tested.
This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory.

"(see Enclosure #)" refers to additional information appended to the report.
"(see appended table)" refers to a table appended to the report.

Throughout this report a point is used as the decimal separator.

Refer to the Cover Page For Test Report for a list of all Factory Locations.

GENERAL PRODUCT INFORMATION:

Report Summary

All applicable tests according to the referenced standard(s) have been carried out.

Product Description

The equipment is a tower type server in a metal chassis. All primary, AC circuits are contained within the separate enclosure of the separately certified power supplies. The equipment has no connection to TNV networks. The inside of the equipment is for access by trained service persons only. The equipment can operate on one power supply; the second power supply is redundant. Each AC Input is for connection to a separate branch circuit. The electrical ratings are per each AC Inlet.

Model Differences

All models are similar except for the alternate power supplies and alternate motherboards described in this report, and minor cosmetic differences and/or differences in software, and/or minor differences in SELV logic circuits.

Additional Information

Some of the attached component Licenses are greater than 3 years old, an accepting NCB may request updated Licenses for these components.

The CB Certificates for the Power Supplies are provided as an attachment in this Report; the manufacturer will provide the complete CB Report upon request from the accepting NCB.

Technical Considerations

The product was submitted and evaluated for use at the maximum ambient temperature (Tma) permitted by the manufacturer's specification of: 40 °C

The means of connection to the mains supply is: Pluggable A

The product is intended for use on the following power systems: TN, IT (Norway)

The equipment disconnect device is considered to be: Appliance Inlet

The class of laser product is: Incorporates previously certified Class 1 laser source (CD/DVD drive)

The product was investigated to the following additional standards: EN 60950-1:2001 + A11:2004 (which includes all European national differences, including those specified in this test report).

The following circuit locations (with circuit/schematic designation) were investigated as a limited power source (LPS): All external I/O connectors

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
1	**GENERAL**		Pass
1.5	Components		Pass
1.5.1	General		Pass
	Comply with IEC 60950 or relevant component standard	Reference Table 1.5.1.	Pass
1.5.2	Evaluation and testing of components		Pass
1.5.3	Thermal controls		N/A
1.5.4	Transformers	Evaluated in separate certification of power supply.	N/A
1.5.5	Interconnecting cables	Interconnecting cables not provided.	N/A
1.5.6	Capacitors in primary circuits ..... :	Evaluated in separate certification of power supply.	N/A
1.5.7	Double insulation or reinforced insulation bridged by components		N/A
1.5.7.1	General		N/A
1.5.7.2	Bridging capacitors		N/A
1.5.7.3	Bridging resistors		N/A
1.5.7.4	Accessible parts		N/A
1.5.8	Components in equipment for IT power systems	Line-to-earth capacitors rated for line-to-line system voltage.	Pass
1.6	**Power interface**		Pass
1.6.1	AC power distribution systems		Pass
1.6.2	Input current	Reference Table 1.6.2.	Pass
1.6.3	Voltage limit of hand-held equipment		N/A
1.6.4	Neutral conductor		Pass

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
1.7	**Marking and instructions**		Pass
1.7.1	Power rating		Pass
	Rated voltage(s) or voltage range(s) (V) ..... :	Refer to the Rating information at the beginning of this Test Report.	Pass
	Symbol for nature of supply, for d.c. only ..... :		N/A
	Rated frequency or rated frequency range (Hz) .... :	Refer to the Rating information at the beginning of this Test Report.	Pass
	Rated current (mA or A) ..... :	Refer to the Rating information at the beginning of this Test Report.	Pass
	Manufacturer's name or trademark or identification mark ..... :	Refer to the Rating information at the beginning of this Test Report.	Pass
	Type/model or type reference ..... :	Refer to the Rating information at the beginning of this Test Report.	Pass
	Symbol for Class II equipment only ..... :		N/A
	Other symbols ..... :		N/A
	Certification marks ..... :	UL, C-UL.	Pass
1.7.2	Safety instructions	Operating/safety instructions made available to the user.	Pass
1.7.3	Short duty cycles		N/A
1.7.4	Supply voltage adjustment ..... :		N/A
1.7.5	Power outlets on the equipment ..... :		N/A
1.7.6	Fuse identification ..... :	Fuse identification provided in power supply; evaluated in separate certification of power supply.	N/A
1.7.7	Wiring terminals		N/A
1.7.7.1	Protective earthing and bonding terminals ..... :		N/A
1.7.7.2	Terminal for a.c. mains supply conductors		N/A
1.7.7.3	Terminals for d.c. mains supply conductors		N/A
1.7.8	Controls and indicators		Pass
1.7.8.1	Identification, location and marking ..... :	The function of controls	Pass

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
		affecting safety is obvious regardless of language.	
1.7.8.2	Colours ..... :	Only functional indicators use color.	Pass
1.7.8.3	Symbols according to IEC 60417 ..... :	The stand-by symbol (60417-1-IEC-5009) is marked on the front panel standby switch.	Pass
1.7.8.4	Markings using figures..... :		N/A
1.7.9	Isolation of multiple power sources ..... :	Marking states following or equivalent, "Disconnect all power sources before servicing."	Pass
1.7.10	IT power distribution systems	Suitable installation instructions are provided (Norway).	Pass
1.7.11	Thermostats and other regulating devices		N/A
1.7.12	Language..... :	Reviewed English markings/instructions. May be provided in other languages upon request from the manufacturer.	-
1.7.13	Durability	The marking(s) withstood the required test.	Pass
1.7.14	Removable parts	Required markings not located on removable parts.	Pass
1.7.15	Replaceable batteries	The lithium battery is not located in an Operator Access Area. The required warning is in the service manual.	Pass
	Language..... :	Reviewed only English instruction. Reference Enclosures, Miscellaneous, manufacturer's Declaration.	-
1.7.16	Operator access with a tool..... :	The inside of the equipment is for access by trained service persons only.	N/A
1.7.17	Equipment for restricted access locations..... :		N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

2	**PROTECTION FROM HAZARDS**		Pass
2.1	Protection from electric shock and energy hazards		Pass
2.1.1	Protection in operator access areas	The inside of the equipment is for access by trained service persons only.	Pass
2.1.1.1	Access to energized parts	No operator access to energized parts.	Pass
	Test by inspection..... :	The operator does not have access to parts specified in cl. 2.1.1.1.	Pass
	Test with test finger..... :	The test finger was not able to contact the parts specified in cl. 2.1.1.1.	Pass
	Test with test pin..... :	The test pin was unable to contact bare hazardous parts.	Pass
	Test with test probe ..... :	No TNV circuits in the equipment.	N/A
2.1.1.2	Battery compartments..... :		N/A
2.1.1.3	Access to ELV wiring		N/A
	Working voltage (V); minimum distance (mm) through insulation ..... :		-
2.1.1.4	Access to hazardous voltage circuit wiring		N/A
2.1.1.5	Energy hazards..... :	The operator does not have access to hazardous energy parts. The inside of the equipment is for access by trained service persons only.	Pass
2.1.1.6	Manual controls		N/A
2.1.1.7	Discharge of capacitors in equipment	Evaluated in separate certification of power supply.	N/A
	Time-constant (s); measured voltage (V) ..... :		-
2.1.2	Protection in service access areas		Pass
2.1.3	Protection in restricted access locations		N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

2.2	**SELV circuits**		Pass
2.2.1	General requirements		Pass
2.2.2	Voltages under normal conditions (V) ..... :	All accessible voltages are less than 42.4 Vp or 60 V dc and are classified as SELV. Maximum output voltage of power supply is 12 Vdc. Maximum accessible connector voltage is 5.1Vdc.	Pass
2.2.3	Voltages under fault conditions (V)..... :	Under fault conditions voltages never exceed 71V peak and 120Vdc and do not exceed 42.4V peak or 60V dc for more than 0.2 sec. Evaluated in separate certification of power supply. Maximum output voltage of power supply is 12 Vdc. Maximum accessible connector voltage is 5.1Vdc.	Pass
2.2.3.1	Separation by double insulation or reinforced insulation (method 1)	Evaluated in separate certification of power supply.	N/A
2.2.3.2	Separation by earthed screen (method 2)		N/A
2.2.3.3	Protection by earthing of the SELV circuit (method 3)		N/A
2.2.4	Connection of SELV circuits to other circuits..... :	SELV circuits are only connected to other SELV circuits.	Pass

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

2.3	**TNV circuits**		N/A
2.3.1	Limits	Equipment does not have connection to TNV circuits.	N/A
	Type of TNV circuits ..... :		-
2.3.2	Separation from other circuits and from accessible parts		N/A
	Insulation employed..... :		-
2.3.3	Separation from hazardous voltages		N/A
	Insulation employed..... :		-
2.3.4	Connection of TNV circuits to other circuits		N/A
	Insulation employed..... :		-
2.3.5	Test for operating voltages generated externally		N/A

2.4	**Limited current circuits**		N/A
2.4.1	General requirements		N/A
2.4.2	Limit values		N/A
	Frequency (Hz)..... :		-
	Measured current (mA)..... :		-
	Measured voltage (V) ..... :		-
	Measured capacitance (mF)..... :		-
2.4.3	Connection of limited current circuits to other circuits		N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

2.5	**Limited power sources**		Pass
	Inherently limited output		N/A
	Impedance limited output	Data pins of the RJ-45 ethernet connectors, the USB connectors, the RS232, VGA, Keyboard and Mouse connectors are Limited Power Source by impedance of the logic circuits. Power pins of the Keyboard, Mouse, USB and VGA connectors are Limited Power Source by impedance of the PTC devices. Reference Table 1.5.1	Pass
	Overcurrent protective device limited output		N/A
	Regulating network limited output under normal operating and single fault condition		N/A
	Regulating network limited output under normal operating conditions and overcurrent protective device limited output under single fault condition		N/A
	Output voltage (V), output current (A), apparent power (VA): ..... :	Power pin of following connectors: Keyboard: 4.95V, 3.4A, 13.6VA; Mouse: 4.94V, 3.4A, 13.6VA; USB: 5.1V, 3.55A, 13.9VA VGA port: 5.1V, 3.76A, 16.7VA	-
	Current rating of overcurrent protective device (A) :	Reference Table 1.5.1 for PTC device ratings.	-

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

2.6	**Provisions for earthing and bonding**		Pass
2.6.1	Protective earthing		Pass
2.6.2	Functional earthing		N/A
2.6.3	Protective earthing and protective bonding conductors		Pass
2.6.3.1	General		Pass
2.6.3.2	Size of protective earthing conductors	For North America, the protective earthing conductor is located in the optional power supply cord and is sized in accordance with the NEC/CEC. Reference Enclosures, Miscellaneous, Manufacturer's Letter of Assurance for other countries.	Pass
	Rated current (A), cross-sectional area (mm2), AWG ..... :	For North America: 11A max., 16 AWG min.	-
2.6.3.3	Size of protective bonding conductors	Evaluated in separate certification of power supply.	N/A
	Rated current (A), cross-sectional area (mm2), AWG ..... :	Evaluated in separate certification of power supply.	-
2.6.3.4	Resistance (Ohm) of earthing conductors and their terminations, test current (A) ..... :	Evaluated in separate certification of power supply. All primary hazardous voltages are located within the complete metal enclosure of the power supply. All circuits outside the power supply are SELV.	N/A
2.6.3.5	Colour of insulation ..... :	Green / Yellow	Pass
2.6.4	Terminals		Pass
2.6.4.1	General		Pass
2.6.4.2	Protective earthing and bonding terminals	Earthing Pin of Appliance Inlet is the Main Protective Earthing Terminal. Protective Bonding terminals were evaluated in separate certification of power supply.	Pass
	Rated current (A), type and nominal thread	Earthing Pin of Appliance Inlet	-

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	diameter (mm) ..... :	is the Main Protective Earthing Terminal. Protective Bonding terminals were evaluated in separate certification of power supply.	
2.6.4.3	Separation of the protective earthing conductor from protective bonding conductors		Pass
2.6.5	Integrity of protective earthing		Pass
2.6.5.1	Interconnection of equipment		N/A
2.6.5.2	Components in protective earthing conductors and protective bonding conductors	No components in Protective Earthing or Protective Bonding conductors.	Pass
2.6.5.3	Disconnection of protective earth		N/A
2.6.5.4	Parts that can be removed by an operator		Pass
2.6.5.5	Parts removed during servicing		Pass
2.6.5.6	Corrosion resistance	Complied with Annex J.	Pass
2.6.5.7	Screws for protective bonding	No self-tapping or spaced thread screws used for protective bonding.	N/A
2.6.5.8	Reliance on telecommunication network or cable distribution system		N/A
2.7	**Overcurrent and earth fault protection in primary circuits**		Pass
2.7.1	Basic requirements		Pass
	Instructions when protection relies on building installation	Equipment is Pluggable Type A.	N/A
2.7.2	Faults not covered in 5.3		N/A
2.7.3	Short-circuit backup protection	Equipment is Pluggable Type A. The building installation provides the short-circuit backup protection.	Pass
2.7.4	Number and location of protective devices..... :	Fuse in the "live" phase in the power supply.	Pass
2.7.5	Protection by several devices		N/A
2.7.6	Warning to service personnel ..... :		N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

2.8	**Safety interlocks**		N/A
2.8.1	General principles		N/A
2.8.2	Protection requirements		N/A
2.8.3	Inadvertent reactivation		N/A
2.8.4	Fail-safe operation		N/A
2.8.5	Moving parts		N/A
2.8.6	Overriding		N/A
2.8.7	Switches and relays		N/A
2.8.7.1	Contact gaps (mm) ..... :		N/A
2.8.7.2	Overload test		N/A
2.8.7.3	Endurance test		N/A
2.8.7.4	Electric strength test		N/A
2.8.8	Mechanical actuators		N/A

2.9	**Electrical insulation**		Pass
2.9.1	Properties of insulating materials	Natural rubber, materials containing asbestos and hygroscopic materials are not used as insulation.	Pass
2.9.2	Humidity conditioning	Evaluated in separate certification of power supply.	N/A
	Humidity (%) ..... :		-
	Temperature (°C) ..... :		-
2.9.3	Grade of insulation	Basic and Functional. Primary to Secondary evaluated in separate power supply investigation.	Pass

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

2.10	**Clearances, creepage distances and distances through insulation**		Pass
2.10.1	General	Pollution Degree 2 applicable.	Pass
2.10.2	Determination of working voltage		Pass
2.10.3	Clearances		Pass
2.10.3.1	General		Pass
2.10.3.2	Clearances in primary circuit	All primary circuit clearances were evaluated in separate certification of power supply.	N/A
2.10.3.3	Clearances in secondary circuits	Reference Cl. 5.3.4c.	Pass
2.10.3.4	Measurement of transient voltage levels		N/A
2.10.4	Creepage distances	Creepage distances in primary circuits were evaluated in separate certification of power supply. Reference cl. 5.3.4c for creepage distances in secondary circuits.	Pass
	CTI tests..... :	Material group IIIb; 100 <=CTI <175.	-
2.10.5	Solid insulation	Evaluated in separate certification of power supply.	N/A
2.10.5.1	Minimum distance through insulation	Evaluated in separate certification of power supply.	N/A
2.10.5.2	Thin sheet material	Evaluated in separate certification of power supply.	N/A
	Number of layers (pcs) ..... :		-
	Electric strength test ..... :		-
2.10.5.3	Printed boards		N/A
	Distance through insulation		N/A
	Electric strength test for thin sheet insulating material ..... :		-
	Number of layers (pcs) ..... :		N/A
2.10.5.4	Wound components		N/A
	Number of layers (pcs) ..... :		N/A
	Two wires in contact inside wound component; angle between 45° and 90° ..... :		N/A
2.10.6	Coated printed boards		N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.10.6.1	General		N/A
2.10.6.2	Sample preparation and preliminary inspection		N/A
2.10.6.3	Thermal cycling		N/A
2.10.6.4	Thermal ageing (°C) ..... :		N/A
2.10.6.5	Electric strength test ..... :		-
2.10.6.6	Abrasion resistance test		N/A
	Electric strength test ..... :		-
2.10.7	Enclosed and sealed parts ..... :		N/A
	Temperature T1=T2 = Tma - Tamb +10K (°C)..... :		N/A
2.10.8	Spacings filled by insulating compound..... :	Evaluated in separate certification of power supply.	N/A
	Electric strength test ..... :		-
2.10.9	Component external terminations		N/A
2.10.10	Insulation with varying dimensions		N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

3	**WIRING, CONNECTIONS AND SUPPLY**		Pass
3.1	General		Pass
3.1.1	Current rating and overcurrent protection		Pass
3.1.2	Protection against mechanical damage		Pass
3.1.3	Securing of internal wiring		Pass
3.1.4	Insulation of conductors		Pass
3.1.5	Beads and ceramic insulators	Not used.	N/A
3.1.6	Screws for electrical contact pressure		Pass
3.1.7	Insulating materials in electrical connections	The equipment does not have any electrical connections that rely on insulating material for adequate contact pressure.	Pass
3.1.8	Self-tapping and spaced thread screws	Thread-cutting or spaced thread screws are not used for electrical connections. Machine screws only.	Pass
3.1.9	Termination of conductors		Pass
	10 N pull test	Complied by inspection.	N/A
3.1.10	Sleeving on wiring		N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

3.2	**Connection to an a.c. mains supply or a d.c. mains supply**		Pass
3.2.1	Means of connection	Appliance Inlet	Pass
3.2.1.1	Connection to an a.c. mains supply		Pass
3.2.1.2	Connection to a d.c. mains supply		N/A
3.2.2	Multiple supply connections		Pass
3.2.3	Permanently connected equipment		N/A
	Number of conductors, diameter (mm) of cable and conduits.....:		-
3.2.4	Appliance inlets	The appliance inlet is separately certified and complies with IEC 60320.	Pass
3.2.5	Power supply cords	Manufacturer may provide optional power cord for North America only. Reference Enclosures, Miscellaneous, Manufacturer's Letter of Assurance for other countries.	Pass
3.2.5.1	AC power supply cords	Manufacturer may provide optional power cord for North America only. Reference Enclosures, Miscellaneous, Manufacturer's Letter of Assurance for other countries.	Pass
	Type.....:	For North America: SVT or SJT	-
	Rated current (A), cross-sectional area (mm^2), AWG .....:	For North America: 11A, 16 AWG minimum	-
3.2.5.2	DC power supply cords		N/A
3.2.6	Cord anchorages and strain relief		N/A
	Mass of equipment (kg), pull (N) .....:		-
	Longitudinal displacement (mm).....:		-
3.2.7	Protection against mechanical damage		Pass
3.2.8	Cord guards		N/A
	D (mm); test mass (g).....:		-

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Radius of curvature of cord (mm) ..... :		-
3.2.9	Supply wiring space		N/A
3.3	**Wiring terminals for connection of external conductors**		N/A
3.3.1	Wiring terminals		N/A
3.3.2	Connection of non-detachable power supply cords		N/A
3.3.3	Screw terminals		N/A
3.3.4	Conductor sizes to be connected		N/A
	Rated current (A), cord/cable type, cross-sectional area (mm²) ..... :		-
3.3.5	Wiring terminal sizes		N/A
	Rated current (A), type and nominal thread diameter (mm) ..... :		-
3.3.6	Wiring terminals design		N/A
3.3.7	Grouping of wiring terminals		N/A
3.3.8	Stranded wire		N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

3.4	**Disconnection from the mains supply**		Pass
3.4.1	General requirement		Pass
3.4.2	Disconnect devices	Appliance Inlet	Pass
3.4.3	Permanently connected equipment		N/A
3.4.4	Parts which remain energized		N/A
3.4.5	Switches in flexible cords		N/A
3.4.6	Single-phase equipment and d.c. equipment		Pass
3.4.7	Three-phase equipment		N/A
3.4.8	Switches as disconnect devices		N/A
3.4.9	Plugs as disconnect devices		N/A
3.4.10	Interconnected equipment		N/A
3.4.11	Multiple power sources	Marking states following or equivalent, "Disconnect all power sources before servicing."	Pass

3.5	**Interconnection of equipment**		Pass
3.5.1	General requirements		Pass
3.5.2	Types of interconnection circuits .....:	Interconnection circuits are SELV circuits.	Pass
3.5.3	ELV circuits as interconnection circuits		N/A

4	**PHYSICAL REQUIREMENTS**		Pass
4.1	Stability		Pass
	Angle of 10°	Unit does not overbalance at 10º.	Pass
	Test: force (N).....:	Floor-standing unit does not overbalance when a force of 51N is applied. Floor-standing unit does not overbalance when a downward force of 800 N (180 lbs) is applied.	Pass

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

4.2	**Mechanical strength**		Pass
4.2.1	General		Pass
4.2.2	Steady force test, 10 N	Evaluated in separate certification of power supply.	N/A
4.2.3	Steady force test, 30 N		N/A
4.2.4	Steady force test, 250 N	Enclosure is metal, minimum thickness 0.8mm. Complied by inspection.	Pass
4.2.5	Impact test	Equipment overall enclosure is metal, minimum thickness 0.8 mm. Complied by inspection.	Pass
	Fall test	Equipment overall enclosure is metal, minimum thickness 0.8 mm. Complied by inspection.	Pass
	Swing test		N/A
4.2.6	Drop test		N/A
4.2.7	Stress relief test	Equipment enclosure is metal. Front bezels are decorative.	N/A
4.2.8	Cathode ray tubes		N/A
	Picture tube separately certified ..... :		N/A
4.2.9	High pressure lamps		N/A
4.2.10	Wall or ceiling mounted equipment; force (N) ..... :		N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

4.3	**Design and construction**		Pass
4.3.1	Edges and corners		Pass
4.3.2	Handles and manual controls; force (N) ..... :		N/A
4.3.3	Adjustable controls		N/A
4.3.4	Securing of parts		Pass
4.3.5	Connection of plugs and sockets		Pass
4.3.6	Direct plug-in equipment		N/A
	Dimensions (mm) of mains plug for direct plug-in . :		N/A
	Torque and pull test of mains plug for direct plug-in; torque (Nm); pull (N) ..... :		N/A
4.3.7	Heating elements in earthed equipment		N/A
4.3.8	Batteries	Lithium Battery on the motherboard is protected by 1kOhm Resistor, and Diode in series. Reference Table 1.5.1.	Pass
4.3.9	Oil and grease		N/A
4.3.10	Dust, powders, liquids and gases		N/A
4.3.11	Containers for liquids or gases		N/A
4.3.12	Flammable liquids ..... :		N/A
	Quantity of liquid (l) ..... :		N/A
	Flash point (°C) ..... :		N/A
4.3.13	Radiation; type of radiation	Equipment employs non-laser type LEDs for functional indicators only. Equipment employs an optional CD/DVD drive which is a Class 1 laser product; reference Table 1.5.1.	Pass
4.3.13.1	General		Pass
4.3.13.2	Ionizing radiation		N/A
	Measured radiation (pA/kg) ..... :		-
	Measured high-voltage (kV) ..... :		-
	Measured focus voltage (kV) ..... :		-

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	CRT markings ..... :		-
4.3.13.3	Effect of ultraviolet (UV) radiation on materials		N/A
	Part, property, retention after test, flammability classification ..... :		N/A
4.3.13.4	Human exposure to ultraviolet (UV) radiation..... :		N/A
4.3.13.5	Laser (including LEDs)	Equipment employs non-laser type LEDs for functional indicators only. Equipment employs an optional CD/DVD drive which is a Class 1 laser product; reference Table 1.5.1.	Pass
	Laser class..... :	Equipment employs non-laser type LEDs for functional indicators only. Equipment employs an optional CD/DVD drive which is a Class 1 laser product; reference Table 1.5.1.	-
4.3.13.6	Other types ..... :		N/A
4.4	**Protection against hazardous moving parts**		Pass
4.4.1	General		Pass
4.4.2	Protection in operator access areas		Pass
4.4.3	Protection in restricted access locations		N/A
4.4.4	Protection in service access areas	Unintentional contact with hazardous moving parts is unlikely.	Pass

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

4.5	**Thermal requirements**		Pass
4.5.1	Maximum temperatures	Reference Table 4.5.	Pass
	Normal load condition per Annex L ..... :	Operated in the most unfavorable way of operation given in the operating instructions until steady conditions established. Permitted rises based on manufacturer's specified Tmra of 40°C.	Pass
4.5.2	Resistance to abnormal heat	Evaluated in separate certification of power supply.	N/A

4.6	**Openings in enclosures**		Pass
4.6.1	Top and side openings	Foreign objects entering the enclosure will not contact bare parts at hazardous voltage or energy. (No hazardous parts within 5° projection).	Pass
	Dimensions (mm)..... :	Top, Left, Right: No openings. Rear: 14.8mm by 3.9mm slots and irregular shaped fan ventilation openings slots. Front: 5.7mm by 5.7mm slots; 12mm by 3mm slots.	-
4.6.2	Bottoms of fire enclosures		Pass
	Construction of the bottom..... :	No openings except 20.6mm by 0.9mm slots under disk drive bay and unused 3.5mm diameter screw holes which are covered by internal barrier sheet; reference Table 1.5.1.	-
4.6.3	Doors or covers in fire enclosures	The inside of the equipment is only for access by qualified service persons.	N/A
4.6.4	Openings in transportable equipment		N/A
4.6.5	Adhesives for constructional purposes		N/A
	Conditioning temperature (°C)/time (weeks) ..... :		-

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

4.7	**Resistance to fire**		Pass
4.7.1	Reducing the risk of ignition and spread of flame	Method 1	Pass
	Method 1, selection and application of components wiring and materials		Pass
	Method 2, application of all of simulated fault condition tests		N/A
4.7.2	Conditions for a fire enclosure		Pass
4.7.2.1	Parts requiring a fire enclosure	A fire enclosure covers all parts.	Pass
4.7.2.2	Parts not requiring a fire enclosure		N/A
4.7.3	Materials		Pass
4.7.3.1	General	The propagation of fire is minimized through the fire enclosure construction.	Pass
4.7.3.2	Materials for fire enclosures	Metal	Pass
4.7.3.3	Materials for components and other parts outside fire enclosures	Front bezels and top panel are min. HB.	Pass
4.7.3.4	Materials for components and other parts inside fire enclosures	All internal materials are rated V-2 or HF-2 or better, or are mounted on a Printed Circuit Board rated V-1 or better. Internal wiring is UL Recognized, rated VW-1 or FT-1.	Pass
4.7.3.5	Materials for air filter assemblies	Air filter behind front disk drive door is outside the fire enclosure, and separated from electrical parts by at least 13 mm of air.	Pass
4.7.3.6	Materials used in high-voltage components		N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

5	**ELECTRICAL REQUIREMENTS AND SIMULATED ABNORMAL CONDITIONS**		Pass
5.1	Touch current and protective conductor current		N/A
5.1.1	General	Evaluated in separate certification of power supply. All primary hazardous voltages are located within the complete metal enclosure of the power supply. All circuits outside the power supply are SELV.	N/A
5.1.2	Equipment under test (EUT)		N/A
5.1.3	Test circuit		N/A
5.1.4	Application of measuring instrument		N/A
5.1.5	Test procedure		N/A
5.1.6	Test measurements		N/A
	Test voltage (V) ..... :		-
	Measured touch current (mA) ..... :		-
	Max. allowed touch current (mA) ..... :		-
	Measured protective conductor current (mA) ..... :		-
	Max. allowed protective conductor current (mA) ... :		-
5.1.7	Equipment with touch current exceeding 3.5 mA .. :		N/A
5.1.8	Touch currents to and from telecommunication networks and cable distribution systems and from telecommunication networks		N/A
5.1.8.1	Limitation of the touch current to a telecommunication network and a cable distribution system		N/A
	Test voltage (V) ..... :		-
	Measured touch current (mA) ..... :		-
	Max. allowed touch current (mA) ..... :		-
5.1.8.2	Summation of touch currents from telecommunication networks ..... :		N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

5.2	**Electric strength**		Pass
5.2.1	General	Reference Table 5.2.	Pass
5.2.2	Test procedure		Pass

5.3	**Abnormal operating and fault conditions**		Pass
5.3.1	Protection against overload and abnormal operation		Pass
5.3.2	Motors	Motors of ventilation fan and internal storage drives were evaluated in separate certification. Reference Table 1.5.1.	N/A
5.3.3	Transformers	Evaluated in separate certification of power supply.	N/A
5.3.4	Functional insulation ..... :	Method C.	Pass
5.3.5	Electromechanical components		N/A
5.3.6	Simulation of faults	Reference Table 5.3.	Pass
5.3.7	Unattended equipment		N/A
5.3.8	Compliance criteria for abnormal operating and fault conditions		Pass

6	**CONNECTION TO TELECOMMUNICATION NETWORKS**		N/A
6.1	Protection of telecommunication network service persons, and users of other equipment connected to the network, from hazards in the equipment		N/A
6.1.1	Protection from hazardous voltages		N/A
6.1.2	Separation of the telecommunication network from earth		N/A
6.1.2.1	Requirements	Equipment does not have connections to TNV circuits.	N/A
	Test voltage (V) ..... :		-
	Current in the test circuit (mA) ..... :		-
6.1.2.2	Exclusions ..... :		N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

6.2	**Protection of equipment users from overvoltages on telecommunication networks**		N/A
6.2.1	Separation requirements		N/A
6.2.2	Electric strength test procedure		N/A
6.2.2.1	Impulse test		N/A
6.2.2.2	Steady-state test		N/A
6.2.2.3	Compliance criteria		N/A

6.3	**Protection of the telecommunication wiring system from overheating**		N/A
	Max. output current (A) ..... :		-
	Current limiting method..... :		-

7	**CONNECTION TO CABLE DISTRIBUTION SYSTEMS**		N/A
7.1	Protection of cable distribution system service persons, and users of other equipment connected to the system, from hazardous voltages in the equipment		N/A
7.2	Protection of equipment users from overvoltages on the cable distribution system		N/A
7.3	Insulation between primary circuits and cable distribution systems		N/A
7.3.1	General		N/A
7.3.2	Voltage surge test		N/A
7.3.3	Impulse test		N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

A	**Annex A, TESTS FOR RESISTANCE TO HEAT AND FIRE**		Pass
A.1	Flammability test for fire enclosures of movable equipment having a total mass exceeding 18 kg, and of stationary equipment (see 4.7.3.2)		Pass
A.1.1	Samples.....:	1. Barrier Sheet #1, General Electric, FR-65, 0.2mm thickness, color=translucent; 2. Barrier Sheet #2, General Electric, FR-700, 0.254mm thickness, color=black.	-
	Wall thickness (mm) .....:	1. Barrier Sheet #1: 0.2mm thickness; 2. Barrier Sheet #2: 0.254mm thickness.	-
A.1.2	Conditioning of samples; temperature (°C) .....:	1. Barrier Sheet #1: 70 C 2. Barrier Sheet #2: 70 C	Pass
A.1.3	Mounting of samples.....:	1. Barrier Sheet #1: Mounted to bottom of chassis sample, over openings 2. Barrier Sheet #2: Mounted to bottom of chassis sample, over openings.	Pass
A.1.4	Test flame	125mm with inner blue cone of 40mm for fixed, stationary equipment over 18kg.	Pass
A.1.5	Test procedure	The edge of the inner cone of the flame was applied to the same location for 5 seconds, then removed for 5 seconds, until five applications of the flame had been made. Three different sample pieces of each barrier sheet material were tested.	Pass
A.1.6	Compliance criteria	During the test, the samples shall not release either flaming drops or particles capable of igniting the surgical cotton. The sample shall not continue to burn for more than one minute after the fifth application of the test flame.	Pass

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
		and shall not be consumed completely.	
	Sample 1 burning time (s)..... :	1. Barrier Sheet #1: 0 s 2. Barrier Sheet #2: 0 s	-
	Sample 2 burning time (s)..... :	1. Barrier Sheet #1: 0 s 2. Barrier Sheet #2: 0 s	-
	Sample 3 burning time (s)..... :	1. Barrier Sheet #1: 0 s 2. Barrier Sheet #2: 0 s	-
A.2	**Flammability test for fire enclosures of movable equipment having a total mass not exceeding 18 kg, and for material and components located inside fire enclosures (see 4.7.3.2 and 4.7.3.4)**		N/A
A.2.1	Samples, material..... :		-
	Wall thickness (mm) ..... :		-
A.2.2	Conditioning of samples		N/A
A.2.3	Mounting of samples		N/A
A.2.4	Test flame		N/A
A.2.5	Test procedure		N/A
A.2.6	Compliance criteria		N/A
	Sample 1 burning time (s)..... :		-
	Sample 2 burning time (s)..... :		-
	Sample 3 burning time (s)..... :		-
A.2.7	Alternative test acc. to IEC 60695-2-2, cl. 4, 8		N/A
	Sample 1 burning time (s)..... :		-
	Sample 2 burning time (s)..... :		-
	Sample 3 burning time (s)..... :		-

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

A.3	**Hot flaming oil test (see 4.6.2)**		N/A
A.3.1	Mounting of samples		N/A
A.3.2	Test procedure		N/A
A.3.3	Compliance criterion		N/A

B	**Annex B, MOTOR TESTS UNDER ABNORMAL CONDITIONS(see 4.7.2.2 and 5.3.2)**		N/A
B.1	General requirements	Motors of ventilation fans and internal storage drives were evaluated in separate certification. Reference Table 1.5.1.	N/A
	Position ..... :		-
	Manufacturer ..... :		-
	Type ..... :		-
	Rated values ..... :		-
B.2	Test conditions		N/A
B.3	Maximum temperatures		N/A
B.4	Running overload test		N/A
B.5	Locked-rotor overload test		N/A
	Test duration (days) ..... :		-
	Electric strength test: test voltage (V) ..... :		-
B.6	Running overload test for d.c. motors in secondary circuits		N/A
B.7	Locked-rotor overload test for d.c. motors in secondary circuits		N/A
B.7.1	Test procedure		N/A
B.7.2	Alternative test procedure; test time (h) ..... :		N/A
B.7.3	Electric strength test		N/A
B.8	Test for motors with capacitors		N/A
B.9	Test for three-phase motors		N/A
B.10	Test for series motors		N/A
	Operating voltage (V) ..... :		-

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
C	**Annex C, TRANSFORMERS (see 1.5.4 and 5.3.3)**		N/A
	Position ..... :	Evaluated in separate certification of power supply.	-
	Manufacturer ..... :		-
	Type ..... :		-
	Rated values ..... :		-
	Method of protection ..... :		-
C.1	Overload test		N/A
C.2	Insulation		N/A
	Protection from displacement of windings ..... :		N/A
D	**Annex D, MEASURING INSTRUMENTS FOR TOUCH-CURRENT TESTS**		N/A
D.1	Measuring instrument		N/A
D.2	Alternative measuring instrument		N/A
E	**Annex E, TEMPERATURE RISE OF A WINDING**		N/A
F	**Annex F, MEASUREMENT OF CLEARANCES AND CREEPAGE DISTANCES (see 2.10)**		Pass

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

G	**Annex G, ALTERNATIVE METHOD FOR DETERMINING MINIMUM CLEARANCES**		N/A
G.1	Summary of the procedure for determining minimum clearances		N/A
G.2	Determination of mains transient voltage (V)		N/A
G.2.1	AC mains supply		N/A
G.2.2	DC mains supply		N/A
G.3	Determination of telecommunication network transient voltage (V) :		N/A
G.4	Determination of required withstand voltage (V) ... :		N/A
G.5	Measurement of transient levels (V) :		N/A
G.6	Determination of minimum clearances :		N/A

H	**ANNEX H, IONIZING RADIATION (see 4.3.13)**		N/A

J	**Annex J, TABLE OF ELECTROCHEMICAL POTENTIALS (see 2.6.5.6)**		Pass
	Metal used :	sheet steel	-

K	**ANNEX K, THERMAL CONTROLS (see 1.5.3 and 5.3.7)**		N/A
K.1	Making and breaking capacity		N/A
K.2	Thermostat reliability; operating voltage (V) :		N/A
K.3	Thermostat endurance test; operating voltage (V) :		N/A
K.4	Temperature limiter endurance; operating voltage (V) :		N/A
K.5	Thermal cut-out reliability		N/A
K.6	Stability of operation		N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

L	**Annex L, NORMAL LOAD CONDITIONS FOR SOME TYPES OF ELECTRICAL BUSINESS EQUIPMENT (see 1.2.2.1 and 4.5.1)**		Pass
L.1	Typewriters		N/A
L.2	Adding machines and cash registers		N/A
L.3	Erasers		N/A
L.4	Pencil sharpeners		N/A
L.5	Duplicators and copy machines		N/A
L.6	Motor-operated files		N/A
L.7	Other business equipment		Pass

M	**Annex M, CRITERIA FOR TELEPHONE RINGING SIGNALS (see 2.3.1)**		N/A
M.1	Introduction		N/A
M.2	Method A		N/A
M.3	Method B		N/A
M.3.1	Ringing signal		N/A
M.3.1.1	Frequency (Hz) ..... :		-
M.3.1.2	Voltage (V) ..... :		-
M.3.1.3	Cadence; time (s), voltage (V) ..... :		-
M.3.1.4	Single fault current (mA) ..... :		-
M.3.2	Tripping device and monitoring voltage ..... :		N/A
M.3.2.1	Conditions for use of a tripping device or a monitoring voltage		N/A
M.3.2.2	Tripping device		N/A
M.3.2.3	Monitoring voltage (V) ..... :		N/A

N	**Annex N, IMPULSE TEST GENERATORS (see 2.10.3.4, 6.2.2.1, 7.3.2 and clause G.5)**		N/A
N.1	ITU-T impulse test generators		N/A
N.2	IEC 60065 impulse test generator		N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

P	**Annex P, NORMATIVE REFERENCES**	Pass

Q	**Annex Q, BIBLIOGRAPHY**	Pass

R	**Annex R, EXAMPLES OF REQUIREMENTS FOR QUALITY CONTROL PROGRAMMES**		N/A
R.1	Minimum separation distances for unpopulated coated printed boards (see 2.10.6)		N/A
R.2	Reduced clearances (see 2.10.3)		N/A

S	**Annex S, PROCEDURE FOR IMPULSE TESTING (see 6.2.2.3)**		N/A
S.1	Test equipment		N/A
S.2	Test procedure		N/A
S.3	Examples of waveforms during impulse testing		N/A

T	**Annex T, GUIDANCE ON PROTECTION AGAINST INGRESS OF WATER (see 1.1.2)**		N/A
	..... :		-

U	**Annex U, INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION (see 2.10.5.4)**		N/A
	..... :		-

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

1.5.1	**TABLE: list of critical components**				Pass
object/part No.	manufacturer/ trademark	type/model	technical data	standard	mark(s) of conformity[1])
Chassis / Enclosure (mech/elec/fire)	-	-	Metal, minimum thickness, 0.8mm. (overall dimensions 550mm by 435mm by 178mm)	-	-, -
Nameplate Label material	BRADLEY NAMEPLATE CORP	White Thermal Mylar	Min. 80ºC, for application to metal.	UL969	UL, -
Power Supply	ABLECOM TECHNOLOGY INC	PWS-801-1R	Input: 100-240V 50-60Hz, 10-4A. dc Outputs: +12V/66A; +5V/18A +5Vsb/4A	UL60950-1 IEC60950-1 EN60950-1	UL, TUV
Power Supply, alternate	COMPUWARE TECHNOLOGY INC	PWS-1K21P-1R	Input: 100-140V 11-7.5A 50-60Hz. dc Outputs: +12V/74A +5Vsb/4A 900W; Input: 180-240V 8-5A 50-60Hz, dc Outputs: +12V/100A +5Vsb/4A 1200W	UL60950-1 IEC60950-1 EN60950-1	UL, TUV
Rear External Ventilation Fans, two provided.	SANYO DENKI CO LTD	SAN ACE 80, Model 9G0812P1F09	12Vdc, 0.58A (68.2CFM)	UL508 EN 60950-1	UL, VDE
Rear External Ventilation Fans, alternate, two provided.	SANYO DENKI CO LTD	9G0812P1F03	12Vdc, 0.58A (68.2CFM)	UL508 EN 60950-1	UL, TUV
External Rear Fan Guard /	CHI MEI CORP	PA-765B	V-0, minimum 2.5mm thickness	UL94 UL60950-1	UL, -

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

Frame Assembly, two provided					
Mid-Chassis Ventilation Fans, optional, up to three provided	SANYO DENKI CO LTD	SAN ACE 80, Model 9G0812P1F09	12Vdc, 0.58A (68.2CFM)	UL508 EN 60950-1	UL, VDE
Mid-Chassis Ventilation Fans, optional, alternate, up to three provided	SANYO DENKI CO LTD	9G0812P1F03	12Vdc, 0.58A (68.2CFM)	UL508 EN 60950-1	UL, TUV
CPU fan (optional)	NIDEC AMERICA CORP	T92T12MHA7	12Vdc 0.14A (39.9CFM)	UL508 EN 60950-1	UL, TUV
Motherboard, Super Micro Computer, Model X8 or H8 series	various	various	Min V-1; Min.105 ºC	UL60950-1 IEC60950-1	UL, -
PTC Thermistors, for VGA, Mouse, Keyboard, and USB ports. Note: PTC circuit designations may vary between motherboards within the series, however protection circuits are the same.	BOURNS INC	MF-MSMF150	6Vdc, 3A trip current.	EN60730-1	UL, TUV
PTC Thermistors, alternate, for VGA, Mouse, Keyboard, and USB ports. Note: PTC circuit designations may vary between motherboards within the series, however	TYCO ELECTRONICS CORP	miniSMDC150	6Vdc, 3A trip current.	EN60730-1	UL, TUV

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

protection circuits are the same.					
Lithium Battery Protection Circuit Note: Resistor and diode circuit designations may vary between motherboards within the series, however protection circuits are the same.	-	-	Resistor, 1kOhm, and Diode in series.	-	-, -
Lithium Battery	SONY ENERGY DEVICES CORP	CR2032	3 V, maximum 10mA reverse current.	UL1642, IEC60950-1	UL, -
Lithium Battery, alternate	VARTA MICROBATTERY	CR2032	3 V, maximum 5mA reverse current.	UL1642, IEC60950-1	UL, -
Lithium Battery, alternate	PANASONIC CORPORATION, PANASONIC*CORPORATION OF NORTH AMERICA	CR2032	3 V, maximum 5mA reverse current.	UL1642, IEC60950-1	UL, -
Lithium Battery, alternate	HITACHI MAXELL LTD	CR2032	3 V, maximum 10mA reverse current.	UL1642, IEC60950-1	UL, -
Lithium Battery, alternate	MITSUBISHI ELECTRIC CORP	CR2032	3 V, maximum 10mA reverse current.	UL1642, IEC60950-1	UL, -
Lithium Battery, alternate	FDK ENERGY CO LTD	CR2032	3 V, maximum 10mA reverse current.	UL1642, IEC60950-1	UL, -
Printed Circuit Boards (SELV)	various	various	Min V-1; Min.105 ºC	UL796	UL, -
Hard Disk Drive, optional, one to eight provided	SEAGATE TECHNOLOGY L L C	9CA154-302, Barracuda ES2	5Vdc/0.65A12Vdc/0.42A	UL60950-1 IEC60950-1	UL, TUV
Front Bezel for Hard Disk Drives	various	various	Min. HB, Min. 80 C.	UL94 UL60950-1	UL, -
CD/DVD Drive, optional, up to two provided.	PANASONIC CORPORATION, PANASONIC	UJDA710	5Vdc/1.8A Class 1 Laser Product	UL60950-1 EN60950-1 EN60825-1	UL, TUV,

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

	CORPORATION OF NORTH AMERICA				
Floppy Disk Drive, optional	TEAC CORP	FD-05XYYY	5V, 0.8A max.	UL60950-1	UL, -
CPU Air Guide, Empty Disk Drive Tray, Internal Card Brackets, Cover for Power Supply Output Board	various	various	Min. V-2, Min. 80 C.	UL94 UL60950-1	UL, -
Empty Disk Drive Tray	various	various	Min. V-2, Min. 80 C.	UL94 UL60950-1	UL, -
Front Bezels for Disk Drive Trays, Front Disk Drive Door, Plastic Mesh/Frame behind front disk drive door, Top Panel	various	various	Min. HB, Min. 80 C.	UL94 UL60950-1	UL, -
Feet, Bottom of Chassis, Four Provided	various	various	5VB, secured by snap fit and screw to chassis bottom.	UL94 UL60950-1	UL, -
Barrier Sheet, located on chassis bottom, covering bottom openings.	SABIC INNOVATIVE PLASTICS US L L C (E61257)	FR65	VTM-0, 80 C, minimum thickness 0.2mm, covers bottom openings in chassis.	UL94, UL60950-1	UL, -
Barrier Sheet, alternate, located on chassis bottom, covering bottom openings.	SABIC INNOVATIVE PLASTICS US L L C (E61257)	FR700	VTM-0, 80 C, minimum thickness 0.254mm, covers bottom openings in chassis.	UL94, UL60950-1	UL, -
[1]) an asterisk indicates a mark which assures the agreed level of surveillance					

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

1.6.2	**TABLE: electrical data (in normal conditions)**					Pass
fuse #	I rated (A)	U (V)	P (W)	I (mA)	I fuse (mA)	condition/status
-	-	-	-	-	-	-
-	-	-	-	-	-	Following Input measurements on Model 745-8 with Ablecom PWS-801-1R power supply.
--	--	90	818	9.1A	--	MNL1, 60Hz.
--	10 - 4 A	100	810	8.1A	--	MNL1, 60Hz.
--	10 - 4 A	120	799	6.64A	--	MNL1, 60Hz.
--	10 - 4 A	132	793	6.01A	--	MNL1, 60Hz.
--	10 - 4 A	180	807	4.5A	--	MNL1, 50Hz.
--	10 - 4 A	200	799	4.1A	--	MNL1, 50Hz.
--	10 - 4 A	230	798	3.5A	--	MNL1, 50Hz.
--	10 - 4 A	240	797	3.37A	--	MNL1, 50Hz.
--	--	264	795	3.06A	--	MNL1, 50Hz.
-	-	-	-	-	-	-
-	-	-	-	-	-	Following Input measurements on Model 745-12 with COMPUWARE TECHNOLOGY INC, PWS-1K21P-1R power supply
--	--	90	900	10A	--	MNL2, 60Hz.
--	11 - 5.5 A	100	892	8.9A	--	MNL2, 60Hz.
--	11 - 5.5 A	120	897	7.5A	--	MNL2, 60Hz.
--	11 - 5.5 A	132	894	6.8A	--	MNL2, 60Hz.
-	11 - 5.5 A	140	890	6.4A	-	MNL2, 60Hz.
-	11 - 5.5 A	160	884	5.5A	-	MNL2, 60Hz.
--	11 - 5.5 A	180	1180	6.6A	--	MNL2, 50Hz.
--	11 - 5.5 A	200	1175	5.9A	--	MNL2, 50Hz.
--	11 - 5.5 A	230	1164	5.07A	--	MNL2, 50Hz.
--	11 - 5.5 A	240	1168	4.88A	--	MNL2, 50Hz.
--	--	264	1166	4.46A	--	MNL2, 50Hz.
supplementary information:						
MNL1 Conditions: Normal Operation at Maximum Normal Load, consisting of continuous operation with equipment operating on one power supply, equipment running a "burn in" test program, plus external resistive loads on the power supply as follows, so that the p/s output wattage is approximately 80% of rated. Added Load: +5V/ 4.7A; +12V / 38.7A. MNL2 Conditions: Normal Operation at Maximum Normal Load, consisting of continuous operation with equipment operating on one power supply, equipment running a "burn in" test program, plus external resistive loads on the power supply as follows, so that the p/s output wattage is approximately 80% of rated. Added Load: (90V): +5V/ 4.9A, +12V / 71.5A; (264V): +5V/ 4A; +12V / 49A.						

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

2.10.3 and 2.10.4	**TABLE: clearance and creepage distance measurements**					Pass
clearance cl and creepage distance dcr at/of:	Up (V)	U r.m.s. (V)	required cl (mm)	cl (mm)	required dcr (mm)	dcr (mm)
-	-	-	-	-	-	-
supplementary information:						
Reference cl. 5.3.4c.						

2.10.5	**TABLE: distance through insulation measurements**			N/A
distance through insulation di at/of:	Up (V)	test voltage (V)	required di (mm)	di (mm)
supplementary information:				

4.5	**TABLE: temperature rise measurements**						Pass
	test voltage (V)	See below	See bleow	-	-	-	—
	t1 (°C).....	-	-	-	-	-	—
	t2 (°C).....	See below	See below	-	-	-	—
maximum temperature T of part/at:		T (°C)					allowed Tmax (°C)
Model 745-8 with Ablecom PWS-801-1R power supply.		Test A1 90V 60Hz.	Test A2 264V 50Hz.	-	-	-	-
L2 coil, p/s		57.6	45.3	-	-	-	89
L3 coil, p/s		53.2	43	-	-	-	89
T1 coil, p/s		39.9	39.8	-	-	-	94
T2 coil, p/s		36.8	35.2	-	-	-	94
T3 coil, p/s		42.4	42.1	-	-	-	94
T4 coil, p/s		48	47.6	-	-	-	94
CT1 coil, p/s		35.2	34.7	-	-	-	74
Pcb near CPU1, m/b		38.9	39	-	-	-	89
Pcb near CPU2, m/b		37.8	37.9	-	-	-	89
Rear top external fan, center		28.8	28.7	-	-	-	79
Top metal enclosure, outside, over power supply		24.9	25	-	-	-	54

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

Ambient	24.4	24.5	-	-	-	-
Test Duration (hr.)	2.6hrs	3.1hrs	-	-	-	-
-	-	-	-	-	-	-
Model 745-12 with COMPUWARE TECHNOLOGY INC, PWS-1K21P-1R power supply	Test B1 90V 60Hz.	Test B2 264V 50Hz.	-	-	-	-
L1 coil, p/s	53.5	40.8	-	-	-	114
L2 coil, p/s	53.2	41.9	-	-	-	114
L3 coil, p/s	48.9	40.9	-	-	-	114
L4 coil, p/s	38.8	38.9	-	-	-	114
T1 coil, p/s	47.5	52.7	-	-	-	94
T2 coil, p/s	30.7	30.3	-	-	-	94
T3 coil, p/s	29.8	29.4	-	-	-	94
CT1 coil, p/s	29.8	29.3	-	-	-	114
PWB near T601, p/s	28.4	27.7	-	-	-	94
Pcb near CPU1, m/b	38.6	36.8	-	-	-	89
Pcb near CPU2, m/b	38	36.9	-	-	-	89
Rear top external fan, center	29.1	28.8	-	-	-	79
Top metal enclosure, outside, over power supply	25.4	25.6	-	-	-	54
Ambient	24.8	24.5	-	-	-	-
Test Duration (hr.)	2.5 hrs	2.5 hrs	-	-	-	-
temperature T of winding:		R_1 (Ω)	R_2 (Ω)	T (°C)	allowed Tmax (°C)	insulation class
-		-	-	-	-	-

supplementary information:

Product's Tma is 40 deg. C.
Allowed Tmax is adjusted for Tma.
Allowed Tmax for power supply are derived from power supply certification report.
Allowed Tmax for motherboard measurements are based on 105 C rated PCB.

Temperature stabilization was determined by review of temperature chart recordings.

Test A1, A2 Conditions: Normal Operation at Maximum Normal Load, consisting of continuous operation with equipment operating on one power supply, equipment running a "burn in" test program, plus external resistive loads on the power supply as follows, so that the p/s output wattage is approximately 80% of rated. Added Load: +5V/ 4.7A; +12V / 38.7A.

Test B1, B2 Conditions: Normal Operation at Maximum Normal Load, consisting of continuous operation with equipment operating on one power supply, equipment running a "burn in" test program, plus external resistive loads on the power supply as follows, so that the p/s output wattage is approximately 80% of rated.
Added Load: (90V): +5V/ 4.9A, +12V / 71.5A; (264V): +5V/ 4A; +12V / 49A.

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

4.5.2	**TABLE: ball pressure test of thermoplastics**		N/A
	allowed impression diameter (mm) ..... :		—
part		test temperature (°C)	impression diameter (mm)
supplementary information:			

4.7	**TABLE: resistance to fire**			Pass
part	manufacturer of material	type of material	thickness(mm)	flammability class
-	-	-	-	-
supplementary information:				
Reference Table 1.5.1.				

5.2	**TABLE: electric strength tests, impulse tests and voltage surge tests**		Pass
test voltage applied between:		test voltage (V) a.c./d.c.	breakdown Yes / No
1. Primary (Appliance Inlet L + N) to chassis ground		2600 Vdc	No
2. Primary (Appliance Inlet L + N) to chassis ground		2877 Vdc	No
supplementary information:			
Note: Test voltage was based on maximum working voltage in power supply. Test 1: Model 745-8: Power Supply = Ablecom, PWS-801-1R Test 2: Model 745-12: Power Supply = Compuware, PWS-1K21P-1R			

5.3	**TABLE: fault condition tests**					Pass
	ambient temperature (°C) ..... :				See below	—
	model/type of power supply ..... :				See below	—
	manufacturer of power supply ..... :				See below	—
	rated markings of power supply ..... :				Ref. Table 1.5.1.	—
component No.	fault	test voltage (V)	test time	fuse No.	fuse current (A)	result
Model 745-8 with	Block front ventilation	240V, 50Hz.	2.8hrs	-	-	NC, NT, NB T1: 40.7C

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

Ablecom PWS-801-1R power supply	openings					T2: 37.1C T3: 43.7C T4: 48.1C Ambient: 24.7C Note: T1, T2, T3, T4 are Class B. Allowed Tmax from Annex C, Table C.1, adjusted for Tma=40C is 159C.
Model 745-8 with Ablecom PWS-801-1R power supply	Remove two external fans	240V, 50Hz.	0.4hr	-	-	NC, NT, NB T1: 52.8C T2: 48C T3: 56.7C T4: 59.8C Ambient: 24.5C Note: T1, T2, T3, T4 are Class B. Allowed Tmax from Annex C, Table C.1, adjusted for Tma=40C is 159C.
Model 745-12 WITH COMPUWARE TECHNOLOGY INC, PWS-1K21P-1R POWER SUPPLY	Block front ventilation openings	240V, 50Hz.	3.4hrs	-	-	NC, NT, NB T1: 47.1C T2: 31C T3 : 30.1C Ambient: 24.1C Note: T1, T2, T3, are Class B. Allowed Tmax from Annex C, Table C.1, adjusted for Tma=40C is 159C.
Model 745-12 with COMPUWARE TECHNOLOGY INC, PWS-1K21P-1R power supply	Remove two external fans	240V, 50Hz.	0.3hr	-	-	NC, NT, NB T1: 66.6C T2: 46.6C T3: 45.2C Ambient: 25.1C Note: T1, T2, T3, are Class B. Allowed Tmax from Annex C, Table C.1, adjusted for Tma=40C is 160C.
Model 745-8 with Ablecom PWS-801-1R power supply	Power Supply Connector Current Interruption Test, 50 times, under load.	264V, 50Hz.	-	-	-	There was no visible pitting of the contacts. The unit functioned normally after the test. There was no indication of carbon tracking that reduced spacings. There was no indication of

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

						dielectric breakdown as a result of the Electric Strengh Test applied per Table 5.2, following the test.
Model 745-12 with COMPUWARE TECHNOLOGY INC, PWS-1K21P-1R power supply	Power Supply Connector Current Interruption Test, 50 times, under load.	264V, 50Hz.	-	-	-	There was no visible pitting of the contacts. The unit functioned normally after the test. There was no indication of carbon tracking that reduced spacings. There was no indication of dielectric breakdown as a result of the Electric Strengh Test applied per Table 5.2, following the test.
supplementary information:						
Results Key: IP = Internal protection operated (component indicated) CT = Constant temperatures were obtained TW = Transformer winding opened CD = Components damaged (damaged components indicated) NB = No indication of dielectric breakdown YB = Dielectric breakdown (time and location indicated) NC = Cheesecloth remained intact YC = Cheesecloth charred or flamed NT = Tissue paper remained intact YT = Tissue paper charred or flamed						

Enclosure

National Differences

Argentina*
Australia / New Zealand
Austria**
Belgium**
China*
Czech Republic**
Denmark
Finland
France**
Germany
Greece**
Group
Hungary*
India*
Ireland*
Israel*
Italy*
Japan*
Kenya*
Korea
Malaysia*
Netherlands**
Norway
Poland*
Portugal*
Singapore*
Slovakia**
Slovenia*
Spain*
Sweden
Switzerland**
USA / Canada
United Kingdom

* No National Differences Declared
** Only Group Differences

IEC 60950-1			
SubClause	Difference + Test	Result - Remark	Verdict
Australia / New Zealand - Differences to IEC 60950-1:2001, First Edition			
1.2.12.11	POTENTIAL IGNITION SOURCE Possible fault which can starts a fire if the open-circuit voltage measured across an interruption or faulty contact exceeds a value of 50 V (peak) a.c. or d.c. and the product of the peak value of this voltage and the measured r.m.s. current under normal operating conditions exceeds 15VA. Such a faulty contact or interruption in an electrical connection includes those which may occur in conductive patterns on printed boards. Note 201: An electronic protection circuit may be used to prevent such a fault from becoming a POTENTIAL IGNITION SOURCE.		Pass
1.5.1	Add to the first paragraph: "or the relevant Australian / New Zealand Standard".		Pass
1.5.2	Add to the first and third dashed items after the words "IEC Component Standard": "or the relevant Australian / New Zealand Standard".		Pass
1.6.1	Add: AC power distribution systems classified as TT or IT are not allowed		Pass
1.7.12	Add to the first paragraph: All safety instructions and safety markings shall be in English.		Pass
3.2.5	Substitute for Table 3B: Sizes of Conductors --- Rated Current of Equipment (A) / Nominal cross-sectional area (mm²) --- 0.2 <= 3 — 0.5* 3 <= 7.5 — 0.75 7.5 <= 10 — (0.75) 1.00 10 <= 16 — (1,0) 1.5 16 <= 25 — 2.5 25 <= 32 — 4 32 <= 40 — 6 40 <= 63 — 10 63 <= 80 — 16 80 <= 100 — 25 100 <= 125 — 35 125 <= 160 — 50 160 <= 190 — 70 190 <= 230 — 95 230 <= 260 — 120	Reference Enclosures, Miscellaneous, Manufacturer's Letter of Assurance.	Pass

IEC 60950-1			
SubClause	Difference + Test	Result - Remark	Verdict
	260 <= 300 150 300 <= 340 185 340 <= 400 240 400 <= 460 300 --- * This nominal cross-sectional area is only allowed for Class II appliances if the length of the power supply cord, measured between the point where the cord or cord guard, enters the appliance, and the entry to the plug, does not exceed 2 m (0.5 mm² three-core supply flexible cords are not permitted; see Note 2 to Table 2.17 of AS/NZS 3191).		
4.3.6	Replace the third paragraph: Equipment with a plug portion, suitable for insertion into a 10 A 3-pin flat-pin socket-outlet complying with AS/NZS 3112, shall comply with the requirements in AS/NZS 3112 for equipment with integral pins for insertion into socket-outlets.		N/A
4.3.13	For the purpose of this standard compliance with AS/NZS 2211.1 is deemed to be compliance with IEC60825.1		N/A
4.7	Add after the clause: For alternative resistance to fire tests, refer to Annex YY.		Pass
6.2.1	Replace item c) with: An SELV circuit, a TNV-2 circuit or a Limited Current Circuit provided for connection of other equipment. The requirement for separation applies whether or not this circuit is accessible.		N/A
6.2.2	Replace the first paragraph by: In Australia (not in New Zealand), compliance with 6.2.2 is checked by the tests of both 6.2.2.1 and 6.2.2.2.		N/A
6.2.2.1	Replace 6.2.2.1 with: In Australia (not in New Zealand), the electrical separation is subjected to 10 impulses of alternating polarity, using the impulse test generator of Annex N for 10/700µs impulses. The interval between successive impulses is 60 s and the initial voltage, Uc is: - for 6.2.1a): 7.0 kV for hand-held telephones and for headsets; 2.5 kV for other equipment; for 6.2.1b) and 6.2.1c): 1.5 kV.		N/A

IEC 60950-1			
SubClause	Difference + Test	Result - Remark	Verdict
	NOTE 1 - The 7 kV impulse is to simulate lightning surges on typical rural and semi-rural network lines. NOTE 2 - The value of 2.5 kV for 6.2.1a) was chosen to ensure adequacy of the insulation concerned and does not necessarily simulate likely overvoltages.		
6.2.2.2	Replace the first and second paragraphs of 6.2.2.2 with: In Australia (not New Zealand), the electrical separation is subjected to an electric strength test according to 5.2.2. The a.c. test voltage is: - for 6.2.1a) 3 kV - for 6.2.1b) and 6.2.1c) 1.5 kV NOTE 1 - Where there are capacitors across the insulation under test, it is recommended that d.c. test voltages are used. NOTE 2 - The 3 kV and 1.5 kV values have been determined considering the low frequency induced voltages from the power supply distribution system.		N/A

IEC 60950-1			
SubClause	Difference + Test	Result - Remark	Verdict
Denmark - Differences to IEC 60950-1:2001, First Edition			
1.2.4.1	Certain types of Class I appliances (see sub-clause 3.2.1.1) may be provided with plug not establishing earthing continuity when inserted into Danish socket-outlets.		N/A
1.7.2	Supply cords of Class I equipment, which is delivered without a plug, must be provided with a visible tag with the following text: "Vigtigt ! Lederen med grøn/gul isolation må kun tilsluttes en klemme mærket (IEC 417, No. 5019) eller (IEC 417, No. 5017)." If essential for the safety of the equipment, the tag must in addition be provided with a diagram, which shows the connection of the other conductors, or be provided with the following text: "For tilslutning af de øvrige ledere, se medfølgende installationsvejledning".		N/A
1.7.5	Socket-outlets for providing power to other equipment shall be in accordance with the Heavy Current Regulations, Section 107-2-D1, Standard Sheet DK 1-3a, DK 1-5a or DK 1-7a, when used on Class I equipment. For stationary equipment, the socket0outlet shall be in accordance with Standard Sheet DK 1-1b or DK 1-5a.		N/A
1.7.5	Class II equipment shall not be fitted with socket-outlets for providing power to other equipment.		N/A
3.2.1.1	Supply cord of single-phase equipment having a rated current not exceeding 13 A shall be provided with a plug according to the Heavy Current Regulations, Section 107-2-D1. Class I equipment provided with socket-outlets with earth contact or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules shall be provided with a plug in accordance with standard sheet DK 2-1a or DK 2-5a. If poly-phase equipment and single-phase equipment having a rated current exceeding 13 A is provided with a supply cord with a plug, this plug shall be in accordance with the Heavy Current	Reference Enclosures, Miscellaneous, Manufacturer's Letter of Assurance.	Pass

IEC 60950-1			
SubClause	Difference + Test	Result - Remark	Verdict
	Regulations, Section 107-2-D1 or EN 60309-2.		

IEC 60950-1			
SubClause	Difference + Test	Result - Remark	Verdict
Finland - Differences to IEC 60950-1:2001, First Edition			
1.7.2	Class I Pluggable Equipment Type A intended for connection to other equipment or a network shall, if safety relies on connection to protective earth or if surge suppressors are connected between the network terminals and accessible parts, have a marking stating that the equipment must be connected to an earthed mains socket-outlet. The marking text shall be: "Laite on liitettävä suojamaadoituskoskettimilla varustettuun pistorasiaan"	Reference Enclosures, Miscellaneous, Manufacturer's Letter of Assurance.	Pass
6.1.2.1	Add the following text between the first and second paragraph: If this insulation is solid, including insulation forming part of a component, it shall at least consist of either - two layers of thin sheet material, each of which shall pass the electric strength test below, or - one layer having a distance through insulation of at least 0.4 mm, which shall pass the electric strength test below. If this insulation forms part of a semiconductor component (e.g. an optocoupler), there is no distance through insulation requirement for the insulation consisting of an insulating compound completely filling the casing, so that clearances and creepage distances do not exist, if the component passes the electric strength test in accordance with the compliance clause below and in addition: - passes the tests and inspection criteria of IEC 60950-1, 2.10.8 with an electric strength test of 1.5 kV multiplied by 1.6 (the electric strength test of 2.10.7 shall be performed using 1.5 kV), and - is subject to routing testing for electric strength during manufacturing, using a test voltage of 1.5 kV. It is permitted to bridge this insulation with a capacitor complying with IEC 60384-14:1993, subclass Y2. A capacitor classified Y3 according to IEC 60384-14:1993, may bridge this insulation under the following conditions: - the insulation requirements are satisfied by having a capacitor classified Y3 as defined by IEC 60384-14, which in addition to the Y3 testing, is tested with an impulse test of 2.5 kV defined in EN		N/A

IEC 60950-1			
SubClause	Difference + Test	Result - Remark	Verdict
	60950-1, subclause 6.2.2.1; - the additional testing shall be performed on all the test specimens as described in IEC 60384-14; - the impulse test of 2,5 kV is to be performed before the endurance test in IEC 60384-14, in the sequence of tests as described in IEC 60384-14.		
6.1.2.2	The exclusions are applicable for permanently connected equipment and pluggable equipment type B and equipment intended to be used in a restricted access location where equipotential bonding has been applied, e.g. in a telecommunication centre, and which has provision for a permanently connected protective earthing conductor and is provided with instructions for the installation of that conductor by a service person.		N/A
7.1	Requirements according to this annex, 6.1.2.1 and 6.1.2.2 apply with the term telecommunication network in 6.1.2 being replaced by the term cable distribution system.		N/A

IEC 60950-1			
SubClause	Difference + Test	Result - Remark	Verdict
Germany - Differences to IEC 60950-1:2001, First Edition			
1.7.12	(Gesetz uber technische Arbeitsmittel (Garatesicherheitsgesetz) [Law of technical labour equipment {Equipment safety law}], of 23rd October 1992, Article 3, 3rd paragraph, 2nd sentence, together with the "Allgemeine Verwaltungsvorschrift zur Durchfuhrung des Zweiten Abschritts des Geratesicherheitsgesetzes" [General administrative regulation on the execution of the Second Section of the Equipment safety law], of 10th January 1996, article 2, the paragraph, item 2). Directions for use with rules to prevent certain hazards for (among others) maintenance of the technical labour equipment, also for imported technical labour equipment shall be written in the German language. NOTE: Of this requirement, rules for use even only by service personnel are not exempted.	Reviewed only English markings/instructions. May be provided in other languages upon request from the manufacturer. Reference Enclosures, Miscellaneous, for manufacturer's letter of declaration.	Pass
H	(Regulation on protection against hazards by X-ray,of 8th January 1987, Article 5 [operation of X-ray emission source], clauses 1 to 4) a) A licence is required by those who operate an X-ray emission source. b) A licence in accordance with Cl. 1 is not required by those who operate an X-ray emission source on which the electron acceleration voltage does not exceed 20 kV if 1) the local dose rate at a distance of 0,1 m from the surface does not exceed 1 µSv/h and 2) it is adequately indicated on the X-ray emission source that i) X-rays are generated ii) the electron acceleration voltage must not exceed the maximum value stipulated by the manufacturer or importer. c) A licence in accordance with Cl. 1 is also not required by persons who operate an X-ray emission source on which the electron acceleration voltage exceeds 20 kV if 1) the X-ray emission source has been granted a type approval and 2) it is adequately indicated on the X-ray emission source that i) X-rays are generated ii) the device stipulated by the manufacturer or importer guarantees that the maximum		N/A

IEC 60950-1			
SubClause	Difference + Test	Result - Remark	Verdict
	permissible local dose rate in accordance with the type approval is not exceeded and iii) the electron acceleration voltage must not exceed the maximum value stipulated by the manufacturer or importer. d) Furthermore, a licence in accordance with Cl. 1 is also not required by persons who operate X-ray emission sources on which the electron acceleration voltage does not exceed 30 kV if 1) the X-rays are generated only by intrinsically safe CRTs complying with Enclosure III, No. 6, 2) the values stipulated in accordance with Enclosure III, No. 6.2 are limited by technical measures and specified in the device and 3) it is adequately indicated on the X-ray emission source that the X-rays generated are adequately screened by the intrinsically safe CRT.		

IEC 60950-1			
SubClause	Difference + Test	Result - Remark	Verdict
Group - Differences to IEC 60950-1:2001, First Edition			
2.7.1	Replace the subclause as follows: Basic requirements To protect against excessive current, short-circuits and earth faults in primary circuits, protective devices shall be included either as integral parts of the equipment or as parts of the building installation, subject to the following, a), b) and c): a) except as detailed in b) and c), protective devices necessary to comply with the requirements of 5.3 shall be included as parts of the equipment; b) for components in series with the mains input to the equipment such as the supply cord, appliance coupler, r.f.i. filter and switch, short-circuit and earth fault protection may be provided by protective devices in the building installation; c) it is permitted for pluggable equipment type B or permanently connected equipment, to rely on dedicated overcurrent and short-circuit protection in the building installation, provided that the means of protection, e.g. fuses or circuit breakers, is fully specified in the installation instructions. If reliance is placed on protection in the building installation, the installation instructions shall so state, except that for pluggable equipment type A the building installation shall be regarded as providing protection in accordance with the rating of the wall socket outlet.	Equipment is Pluggable Type A.	Pass
2.7.2	Void		N/A
2.10.2	Replace the first line "(see also 1.4.7)" by "(see also 1.4.8)".		Pass
3.2.3	Delete NOTE 1, and in table 3A delete the conduit sizes in parentheses.		Pass
3.2.5	Replace: "60245 IEC 53" by "H05 RR-F" "60227 IEC 52" by "H03 VV-F or H03 VVH2-F" "60227 IEC 53" by "H05 VV-F or H05 VVH2-F" In table 3B, replace the first four lines by the following: Up to and including 6 0.75 [1] Over 6 up to and including 10 0.75 [2] 1.0 Over 10 up to and including 16 1.0 [3] 1.5 In the Conditions applicable to table 3B, delete the	Reference Enclosures, Miscellaneous, Manufacturer's Letter of Assurance.	Pass

IEC 60950-1			
SubClause	Difference + Test	Result - Remark	Verdict
	words "in some countries" in condition [1]. In Note 1, delete the second sentence.		
3.3.4	In table 3D, delete the fourth line: conductor sizes for 10 to 13 A, and replace with the following: "Over 10 up to and including 16 1.5 to 2.5 1.5 to by 4" Delete the fifth line: conductor sizes for 13 to 16A.		N/A
4.3.13.6	Add the following note: NOTE - Attention is drawn to 1999/519/EC: Council Recommendation on the limitation of exposure of the general public to electromagnetic fields 0 Hz to 300 GHz. Standards taking into account this recommendation are currently under development.		Pass
General	Delete all the "country" notes in the reference document according to the following list: 1.5.1 Note 2 1.5.8 Note 2 1.6.1 Note 1.7.2 Note 4 1.7.12 Note 2 2.1 Note 2.2.3 Note 2.2.4 Note 2.3.2 Note 2, 7, 8 2.3.3 Note 1, 2 2.3.4 Note 2,3 2.7.1 Note 2.10.3.1 Note 4 3.2.1.1 Note 3.2.3 Note 1, 2 3.2.5.1 Note 2 4.3.6 Note 1,2 4.7.2.2 Note 4.7.3.1 Note 2 6.1.2.1 Note 6.1.2.2 Note 6.2.2 Note 6.2.2.1 Note 2 6.2.2.2 Note 7 Note 4 7.1 Note G2.1 Note 1, 2 H Note 2		Pass
H	Replace the last paragraph of this annex by: At any point 10 cm from the surface of the operator access area, the dose rate shall not exceed 1 µSv/h (0,1 mR/h) (see note). Account is taken of the background level. Replace the notes as follows: NOTE - These values appear in Directive 96/29/Euratom. Delete Note 2.		N/A
P	Replace the text of this annex by: See annex ZA		Pass
Q	Replace the title of IEC 61032 by "Protection of persons and equipment by enclosures - Probes for verification". Add the following notes for the standards indicated: IEC 60127 NOTE Harmonized as EN 60127		Pass

IEC 60950-1			
SubClause	Difference + Test	Result - Remark	Verdict
	(Series) (not modified) IEC 60269-2-1 NOTE Harmonized as HD 630.2.1 S4:2000 (modified) IEC 60529 NOTE Harmonized as EN 60529:1991 (not modified) IEC 61032 NOTE Harmonized as EN 61032:1998 (not modified) IEC 61140 NOTE Harmonized as EN 61140:2001 (not modified) ITU-T Recommendation K.31 NOTE in Europe, the suggested document is EN 50083-1.		

Korea - Differences to IEC 60950-1:2001, First Edition			
1.5.101	Addition: Plugs for the connection of the apparatus to the supply mains comply with the Korean requirement (KSC 8305).	Reference Enclosures, Miscellaneous, Manufacturer's Letter of Assurance.	Pass
7	Addition: EMC - The apparatus shall complies with the relevant CISPR standards.	Reference Enclosures, Miscellaneous, Manufacturer's Letter of Declaration.	Pass

IEC 60950-1			
SubClause	Difference + Test	Result - Remark	Verdict
Norway - Differences to IEC 60950-1:2001, First Edition			
1.5.8	Due to the IT power system used (see annex V, figure V.7), capacitors are required to be rated for the applicable phase-to-phase voltage (230 V).	Line-to-earth capacitors are located within the separately certified power supply and are correctly rated for the phase to phase system voltage.	Pass
1.7.2	Class I Pluggable Equipment Type A intended for connection to other equipment or a network shall, if safety relies on connection to protective earth or if surge suppressors are connected between the network terminals and accessible parts, have a marking stating that the equipment must be connected to an earthed mains socket-outlet. The marking text shall be: "Apparatet må tilkoples jordet stikkontakt"	Reference Enclosures, Miscellaneous, Manufacturer's Letter of Assurance.	Pass
2.2.4	Requirements according to this annex, 1.7.2 and 6.1.2.1 apply.		N/A
2.3.2	Requirements according to this annex, 6.1.2.1 apply.		N/A
2.3.3	Requirements according to this annex, 1.7.2 and 6.1.2.1 apply.		N/A
2.3.4	Requirements according to this annex, 1.7.2 and 6.1.2.1 apply.		N/A
2.10.3.1	Due to the IT power distribution system used (see annex V, figure V.7), the A.C. mains supply voltage is considered to be equal to the line-to-line voltage, and will remain at 230 V in case of a single earth fault.		Pass
6.1.2.1	Add the following text between the first and second paragraph: If this insulation is solid, including insulation forming part of a component, it shall at least consist of either - two layers of thin sheet material, each of which shall pass the electric strength test below, or - one layer having a distance through insulation of at least 0.4 mm, which shall pass the electric strength test below. If this insulation forms part of a semiconductor component (e.g. an optocoupler), there is no distance through insulation requirement for the insulation consisting of an insulating compound completely filling the casing, so that clearances and		N/A

IEC 60950-1			
SubClause	Difference + Test	Result - Remark	Verdict
	creepage distances do not exist, if the component passes the electric strength test in accordance with the compliance clause below and in addition: - passes the tests and inspection criteria of IEC 60950-1, 2.10.8 with an electric strength test of 1.5 kV multiplied by 1.6 (the electric strength test of 2.10.7 shall be performed using 1.5 kV), and - is subject to routing testing for electric strength during manufacturing, using a test voltage of 1.5 kV. It is permitted to bridge this insulation with a capacitor complying with IEC 60384-14:1993, subclass Y2. A capacitor classified Y3 according to IEC 60384-14:1993, may bridge this insulation under the following conditions: - the insulation requirements are satisfied by having a capacitor classified Y3 as defined by IEC 60384-14, which in addition to the Y3 testing, is tested with an impulse test of 2,5 kV defined in EN 60950-1, subclause 6.2.2.1; - the additional testing shall be performed on all the test specimens as described in IEC 60384-14; - the impulse test of 2,5 kV is to be performed before the endurance test in IEC 60384-14, in the sequence of tests as described in IEC 60384-14.		
6.1.2.2	The exclusions are applicable for permanently connected equipment and pluggable equipment type B and equipment intended to be used in a restricted access location where equipotential bonding has been applied, e.g. in a telecommunication centre, and which has provision for a permanently connected protective earthing conductor and is provided with instructions for the installation of that conductor by a service person.		N/A
7.1	Requirements according to this annex, 6.1.2.1 and 6.1.2.2 apply with the term telecommunication network in 6.1.2 being replaced by the term cable distribution system.		N/A
G.2.1	Due to the IT power distribution system used (see annex V, figure V.7), the A.C. mains supply voltage is considered to be equal to the line-to-line voltage, and will remain at 230 V in case of a single earth fault.		N/A

IEC 60950-1			
SubClause	Difference + Test	Result - Remark	Verdict

Sweden - Differences to IEC 60950-1:2001, First Edition			
1.5.1	(Ordinance (1990:944)) Add NOTE: Switches containing mercury such as thermostats, relays and level controllers are not allowed.		N/A
1.7.2	Class I Pluggable Equipment Type A intended for connection to other equipment or a network shall, if safety relies on connection to protective earth or if surge suppressors are connected between the network terminals and accessible parts, have a marking stating that the equipment must be connected to an earthed mains socket-outlet. The marking text shall be: "Apparaten skall anslutas till jordat uttag"	Reference Enclosures, Miscellaneous, Manufacturer's Letter of Assurance.	Pass
6.1.2.1	Add the following text between the first and second paragraph: If this insulation is solid, including insulation forming part of a component, it shall at least consist of either - two layers of thin sheet material, each of which shall pass the electric strength test below, or - one layer having a distance through insulation of at least 0.4 mm, which shall pass the electric strength test below. If this insulation forms part of a semiconductor component (e.g. an optocoupler), there is no distance through insulation requirement for the insulation consisting of an insulating compound completely filling the casing, so that clearances and creepage distances do not exist, if the component passes the electric strength test in accordance with the compliance clause below and in addition: - passes the tests and inspection criteria of IEC 60950-1, 2.10.8 with an electric strength test of 1.5 kV multiplied by 1.6 (the electric strength test of 2.10.7 shall be performed using 1.5 kV), and - is subject to routing testing for electric strength during manufacturing, using a test voltage of 1.5 kV. It is permitted to bridge this insulation with a capacitor complying with IEC 60384-14:1993, subclass Y2. A capacitor classified Y3 according to IEC 60384-14:1993, may bridge this insulation under the following conditions: - the insulation requirements are satisfied by		N/A

IEC 60950-1			
SubClause	Difference + Test	Result - Remark	Verdict
	having a capacitor classified Y3 as defined by IEC 60384-14, which in addition to the Y3 testing, is tested with an impulse test of 2,5 kV defined in EN 60950-1, subclause 6.2.2.1; - the additional testing shall be performed on all the test specimens as described in IEC 60384-14; - the impulse test of 2,5 kV is to be performed before the endurance test in IEC 60384-14, in the sequence of tests as described in IEC 60384-14.		
6.1.2.2	The exclusions are applicable for permanently connected equipment and pluggable equipment type B and equipment intended to be used in a restricted access location where equipotential bonding has been applied, e.g. in a telecommunication centre, and which has provision for a permanently connected protective earthing conductor and is provided with instructions for the installation of that conductor by a service person.		N/A
7.1	Requirements according to this annex, 6.1.2.1 and 6.1.2.2 apply with the term telecommunication network in 6.1.2 being replaced by the term cable distribution system.		N/A

IEC 60950-1			
SubClause	Difference + Test	Result - Remark	Verdict

USA / Canada - Differences to IEC 60950-1:2001, First Edition			
1.1	Equipment able to be installed in accordance with the National Electrical Code ANSI/NFPA 70 and the Canadian Electrical Code, Part1, and when applicable, the National Electrical Safety Code, IEEE C2.		Pass
1.1.1	Equipment able to be installed in accordance with ANSI/NFPA 75 and NEC Art. 645 unless intended for use outside of computer room and provided with such instructions.		Pass
1.1.2	Equipment in wire-line communication facilities serving high-voltage electric power stations operating at greater than 1kV are excluded.		N/A
1.1.2	Special requirements apply to equipment intended for use outdoors.		N/A
1.4.14	For Pluggable Equipment Type A, the protection in the installation is assumed to be 20 A.		Pass
1.5.1	All IEC standards for components identified in Annex P.1 replaced by the relevant requirements of CSA and UL component standards in Annex P.1.		Pass
1.5.1	All IEC standards for components identified in Annex P.2 alternatively satisfied by the relevant requirements of CSA and UL component standards in Annex P.2.		Pass
1.5.5	Interconnecting cables acceptable for the application regarding voltage, current, temperature, flammability, mechanical serviceability and the like.		N/A
1.5.5	For other than limited power and TNV circuits, the type of output circuit identified for output connector.		N/A
1.5.5	External cable assemblies that exceed 3.05 m in length to be types specified in the NEC and CEC.		N/A
1.5.5	Detachable external interconnecting cables 3.05 m or less in length and provided with equipment marked to identify the responsible organization and the designation for the cable.	Interconnecting cables not provided.	N/A
1.5.5	Building wiring and cable for use in ducts, plenums and other air handling space subject to special requirements and excluded from scope.		N/A
1.5.5	Telephone line and extension cords and the like comply with UL 1863 and CSA C22.2 No. 233.		N/A
1.6.1.2	Equipment intended for connection to a d.c. power (mains) distribution system is subject to special		N/A

IEC 60950-1			
SubClause	Difference + Test	Result - Remark	Verdict
	circuit classification requirements (e.g., TNV-2)		
1.6.1.2	Earthing of d.c. powered equipment provided.		N/A
1.7	Lamp replacement information indicated on lampholder in operator access area.		N/A
1.7.1	Special marking format for equipment intended for use on a supply system with an earthed neutral and more than one phase conductor.		N/A
1.7.1	Equipment voltage rating not higher than rating of the plug except under special conditions.		Pass
1.7.6	Special fuse replacement marking for operator accessible fuses.		N/A
1.7.7	Identification of terminal connection of the equipment earthing conductor.	Equipment employs an appliance inlet.	N/A
1.7.7	Connectors and field wiring terminals for external Class 2 or Class 3 circuits provided with marking indicating minimum Class of wiring to be used.		N/A
1.7.7	Marking located adjacent to terminals and visible during wiring.		N/A
2.1.1	Screw shell of Edison-base lampholder tied to the neutral conductor.		N/A
2.1.1.1	Bare TNV conductive parts in the interior of equipment normally protected against contact by a cover intended for occasional removal are exempt provided instructions include directions for disconnection of TNV prior to removal of the cover.		N/A
2.3.1.b	Other telecommunication signaling systems (e.g., message waiting) than described in 2.3.1(b) are subject to M.4.		N/A
2.3.1.b	For TNV-2 and TNV-3 circuits with other than ringing signals and with voltages exceeding 42.4 Vp or 60 V d.c., the maximum current limit through a 2000 Ohm or greater resistor with loads disconnected is 7.1 mA peak or 30 mA d.c. under normal conditions.		N/A
2.3.1.b	Limits for measurements across 5000 ohm resistor in the event of a single fault are replaced after 200 ms with the limits of M.3.1.4.		N/A
2.3.2	Enamel coating on signal transformer winding wire allowed as an alternative to Basic insulation in specific telecommunication applications when subjected to special construction requirements and routine testing.		N/A

IEC 60950-1			
SubClause	Difference + Test	Result - Remark	Verdict
2.3.2	In the event of a single fault, the limits of 2.2.3 apply to SELV circuits and accessible conductive parts.		N/A
2.5	Overcurrent protection device required for Class 2 and Class 3 limiting in accordance with the NEC, or for a Limited Power Source, not interchangeable with devices of higher ratings if operator replaceable.		N/A
2.6	Equipment having receptacles for output a.c. power connectors generated from an internal separately derived source have the earthed (grounded) circuit conductor suitably bonded to earth.		N/A
2.6.3.3	For Pluggable Equipment Type A, if neither a) or b) are applicable, the current rating of the circuit is taken as 20 A.	Evaluated in separate certification of power supply.	N/A
2.6.3.4	Capacity of connection between earthing terminal and parts required to be earthed subject to special conditions based on the current rating of the circuit.		N/A
2.6.3.4	Protective bonding conductors and their terminals of non-standard constructions (e.g. PWB traces) evaluated to limited short-circuit test of CSA C22.2 No.0.4.		N/A
2.6.4.1	Field wiring terminals for earthing conductors suitable for wire sizes (gauge) used in US and Canada.		N/A
2.7.1	Data for selection of special external branch circuit overcurrent devices marked on the equipment.		N/A
2.7.1	Standard supply outlets protected by overcurrent device in accordance with the NEC, and CEC, Part 1.		N/A
2.7.1	Overcurrent protection for individual transformers that distribute power to other units over branch circuit wiring.		N/A
2.7.1	Additional requirements for overcurrent protection apply to equipment provided with panelboards.		N/A
2.7.1	Non-motor-operated equipment requiring special overcurrent protective device marked with device rating.		N/A
2.10.5.4	Multi-layer winding wire subject to UL component wire requirements in addition to 2.10.5.4 and Annex U.		N/A
3.1.1	Permissible combinations of internal wiring/external		Pass

IEC 60950-1			
SubClause	Difference + Test	Result - Remark	Verdict
	cable sizes for overcurrent and short circuit protection.		
3.1.1	All interconnecting cables protected against overcurrent and short circuit.	Interconnecting Cables not provided. Power pins of the I/O connector ports are protected by PTCs. Reference Table 1.5.1.	N/A
3.2	Wiring methods permit connection of equipment to primary power supply in accordance with the NEC and CEC, Part 1.		Pass
3.2.1	Permitted use for flexible cords and plugs.		Pass
3.2.1	Flexible cords provided with attachment plug rated 125% of equipment current rating.		Pass
3.2.1	Any Class II equipment provided with 15 or 20 A standard supply outlets, Edison-base lampholders or single pole disconnect device provided with a polarized type attachment plug.		N/A
3.2.1.2	Equipment intended for connection to DC mains supply power systems complies with special wiring requirements (e.g., no permanent connection to supply by flexible cord).		N/A
3.2.1.2	Equipment with one pole of the DC mains supply connected to both the equipment mains input terminal and the main protective earthing terminal provided with special instructions and construction provisions for earthing		N/A
3.2.1.2	Equipment with means for connecting supply to earthing electrode conductor has no switches or protective devices between supply connection and earthing electrode connection.		N/A
3.2.1.2	Special markings and instructions for equipment with provisions to connect earthed conductor of a DC supply circuit to earthing conductor at the equipment.		N/A
3.2.1.2	Special markings and instructions for equipment with earthed conductor of a DC supply circuit connected to the earthing conductor at the equipment.		N/A
3.2.1.2	Terminals and leads provided for permanent connection of DC powered equipment to supply marked to indicate polarity if reverse polarity may result in a hazard.		N/A

IEC 60950-1			
SubClause	Difference + Test	Result - Remark	Verdict
3.2.3	Permanently connected equipment has provision for connecting and securing a field wiring system (i.e. conduit, or leads etc.) per the NEC and CEC, Part 1.		N/A
3.2.3	Permanently connected equipment may have terminals or leads not smaller than No. 18 AWG (0.82 mm²) and not less than 152 mm in length for connection of field installed wiring.		N/A
3.2.3	If supply wires exceed 60 °C, marking indicates use of 75 °C or 90 °C wiring for supply connection as appropriate.		N/A
3.2.3	Equipment compatible with suitable trade sizes of conduits and cables.		N/A
3.2.5	Length of power supply cord limited to between 1.5 and 4.5 m unless shorter length used when intended for a special installation.	Power cord for North America is optional. If it is provided, the applicant specifies length of power cord is between 1.5m and 4.5m.	Pass
3.2.5	Conductors in power supply cords sized according to NEC and CEC, Part I.		Pass
3.2.5	Power supply cords and cord sets incorporate flexible cords suitable for the particular application.		Pass
3.2.6	Strain relief provided for non-detachable interconnecting cables not supplied by a limited power source.		N/A
3.2.9	Adequate wire bending space and volume of field wiring compartment required to properly make the field connections.		N/A
3.2.9	Equipment intended solely for installation in Restricted Access Locations using low voltage d.c. systems may not need provision for connecting and securing a field wiring system. A method of securing wiring or instructions provided to ensure the wiring is protected from abuse.		N/A
3.3	Field wiring terminals provided for interconnection of units for other then LPS or Class 2 circuits also comply with 3.3.		N/A
3.3	Interconnection of units by LPS or Class 2 conductors may have field wiring connectors other than those specified in 3.3 if wiring is reliably separated.		N/A
3.3.1	Terminals for the connection of neutral conductor identified by a distinctive white marking or other		N/A

IEC 60950-1			
SubClause	Difference + Test	Result - Remark	Verdict
	equally effective means.		
3.3.3	Wire binding screw terminal permitted for connection of No. 10 AWG (5.3 mm²) or smaller conductor if provided with upturned lugs, cupped washer or equivalent retention.		N/A
3.3.4	Terminals accept wire sizes (gauge) used in the U.S. and Canada.		N/A
3.3.4	Terminals accept current-carrying conductors rated 125% of the equipment current rating.		N/A
3.3.6	Field wiring terminals marked to indicate the material(s) of the conductor appropriate for the terminals used.		N/A
3.3.6	Connection of an aluminum conductor not permitted to terminal for equipment earthing conductor.		N/A
3.3.6	Field wiring connections made through the use of suitable pressure connectors (including set screw type), solder lugs or splices to flexible leads.		N/A
3.4.2	Separate motor control device(s) required for cord-connected equipment rated more than 12 A, or with motor rated more than 1/3 hp or more than 120 V.		N/A
3.4.8	Vertically mounted disconnect devices oriented so up position of handle is "on".		N/A
3.4.11	For computer-room applications, equipment with battery systems capable of supplying 750 VA for 5 min require battery disconnect means.		N/A
4.2.8.1	Special opening restrictions for enclosures around CRTs with face dimension of 160 mm or more.		N/A
4.2.9	Compartment housing high-pressure lamp marked to indicate risk of explosion.		N/A
4.3.2	Loading test for equipment with handle(s) used to support more than 9 kg tested at four times the weight of the unit.		N/A
4.3.6	In addition to the IEC requirements, Direct Plug-in Equipment complies with UL 1310 or CSA 223 mechanical assembly requirements.		N/A
4.3.12	The maximum quantity of flammable liquid stored in equipment complies with ANSI/NFPA 30(Table NAE.6).		N/A
4.3.12	Equipment using replenishable liquids marked to indicate type of liquid to be used.		N/A

IEC 60950-1			
SubClause	Difference + Test	Result - Remark	Verdict
4.3.13.2	Equipment that produces x-radiation and does not comply with 4.3.12 under all conditions of servicing marked to indicate the presence of radiation where readily visible.		N/A
4.3.13.5	Requirements contained in the applicable national codes and regulations apply to lasers (21 CFR 1040 and REDR C1370).		Pass
4.7	Automated information storage equipment intended to contain more than 0.76 m^3 of combustible media requires provision for automatic sprinklers or a gaseous agent extinguishing system.		N/A
4.7.3.1	Equipment for use in environmental air space other than ducts or plenums provided with metal enclosure or with non-metallic enclosure having adequate fire-resistance and low smoke producing characteristics. Low smoke-producing characteristics evaluated according to UL 2043. Equipment for installation in space used for environmental air as described in Sec. 300-22(c) of the NEC provided with instructions indicating suitability for installation in such locations.		N/A
4.7.3.1	Flame spread rating for external surface of combustible material with exposed area greater than 0.93 m^2 or a single dimension greater than 1.8 m; 50 or less for computer room applications or 200 or less for other applications.		N/A
4.7.3.4	Wire marked "VW-1" or "FT-1" considered equivalent.		Pass
5.1.8.2	Special earthing provisions and instructions for equipment with high touch current due to telecommunication network connections.		N/A
5.1.8.3	Touch current due to ringing voltage for equipment containing telecommunication network leads.		N/A
5.3.6	Overloading of SELV connectors and printed wiring board receptacles accessible to the operator.	Data pins of the RJ-45 ethernet connectors, the USB connectors, the RS232, VGA, Keyboard and Mouse connectors are Limited Power Source by impedance of the logic circuits. Power pins of the Keyboard, Mouse, USB and VGA connectors are Limited Power	N/A

IEC 60950-1			
SubClause	Difference + Test	Result - Remark	Verdict
		Source by impedance of the PTC devices. Reference Table 1.5.1	
5.3.6	Tests interrupted by opening of a component repeated two additional times.		N/A
5.3.8.1	Test interrupted by opening of wire or trace subject to certain conditions.		N/A
6	Specialized instructions provided for telephones that may be connected to a telecommunications network.	Equipment does not have connections to TNV circuits.	N/A
6	Marking identifying function of telecommunication type connectors not used for connection to a telecommunication network.		N/A
6.2.1	Special requirements for enameled wiring used as electrical separation provided between parts connected to telecommunication network and telecommunication circuitry intentionally isolated from network.		N/A
6.2.1	Digital line termination equipment (e.g., NCTE) subject to separation requirements.		N/A
6.3	Equipment remotely powered over telecommunication wiring systems provided with specialized markings adjacent to the connection.		N/A
6.3	Overcurrent protection incorporated into equipment to provide power over telecommunication wiring system not interchangeable with devices of higher ratings if operator replaceable.		N/A
6.4	Additional requirements for equipment intended for connection to a telecommunication network using cable subject to overvoltage from power line failures (Fig. 6C).		N/A
6.4	Where 26 AWG line cord required by Fig. 6C, either the cord is provided with the equipment or described in the safety instructions.		N/A
6.5	Acoustic pressure from an ear piece less than 136 dBA for short duration disturbances, and less than 125 dBA for handsets, 118 dBA for headsets, and 121 dBA for insert earphones, for long duration disturbances.		N/A
7	Equipment associated with the cable distribution system may need to be subjected to applicable parts of Chapter 8 of the NEC.		N/A

IEC 60950-1			
SubClause	Difference + Test	Result - Remark	Verdict
H	Ionizing radiation measurements made under single fault conditions in accordance with the requirements of the Code of Federal Regulations 21 CFR 1020 and the Canadian Radiation Emitting Devices Act, REDR C1370.		N/A
M.2	Continuous ringing signals evaluated to Method A subjected to special accessibility considerations.		N/A
M.4	Special requirements for message waiting and similar telecommunications signals.		N/A
NAC	Equipment intended for use with a generic secondary protector marked with suitable instructions.		N/A
NAC	Equipment intended for use with a specific primary or secondary protector marked with suitable instructions.		N/A
NAF	Household/Home Office Document Shredders		N/A
NAF.1.7	Markings and instructions alert the user to key safety considerations related to use of shredders, including not intended to be used by children, avoid touching document feed opening, avoid clothes and hair entanglement, and avoid aerosol products.		N/A
NAF.2.8.3	Safety interlock cannot be inadvertently activated by the articulated accessibility probe (figure NAF.1).		N/A
NAF.3.4	Provided with an isolating switch complying with 3.4.2, including 3 mm contact gap, with appropriate markings associated with the switch.		N/A
NAF.4.4	Hazardous moving parts are not accessible to the user, as determined using the articulated accessibility probe (figure NAF.1) and the accessibility probe/wedge (figures NAF.2/NAF.3).		N/A

IEC 60950-1			
SubClause	Difference + Test	Result - Remark	Verdict

United Kingdom - Differences to IEC 60950-1:2001, First Edition			
2.6.3.3	The current rating of the circuit shall be taken as 13 A, not 16 A.		N/A
2.7.1	To protect against excessive currents and short-circuits in the primary circuit of direct plug-in equipment, protective device shall be included as integral parts of the direct plug-in equipment.		N/A
3.2.1.1	Apparatus which is fitted with a flexible cable or cord and is designed to be connected to a mains socket conforming to BS 1363 by means of that flexible cable or cord and plug, shall be fitted with a "standard plug" in accordance with Statutory Instrument 1786: 1994 - The Plugs and Sockets etc. (Safety) Regulations 1994, unless exempted by those regulations. NOTE: "Standard plug" is defined in SI 1786: 1994 and essentially means an approved plug conforming to BS 1363 or an approved conversion plug.	Reference Enclosures, Miscellaneous, Manufacturer's Letter of Assurance.	Pass
3.2.5.1	A power supply cord with conductor of 1.25 mm² is allowed for equipment with a rated current over 10A and up to and including 13A.	Reference Enclosures, Miscellaneous, Manufacturer's Letter of Assurance.	Pass
3.3.4	The range of conductor sizes of flexible cords to be accepted by terminals for equipment with a rated current of over 10 A up to and including 13 A is 1.25 mm² to 1.5 mm² nominal cross-sectional area.		N/A
4.3.6	The torque test is performed using a socket outlet complying with BS 1363 and the plug part of Direct Plug-In Equipment shall be assessed to BS 1363: Part 1, 12.1, 12.2, 12.3, 12.9, 12.11, 12.12, 12.16 and 12.17, except that the test of 12.17 is performed at not less than 125 °C.		N/A

Enclosure

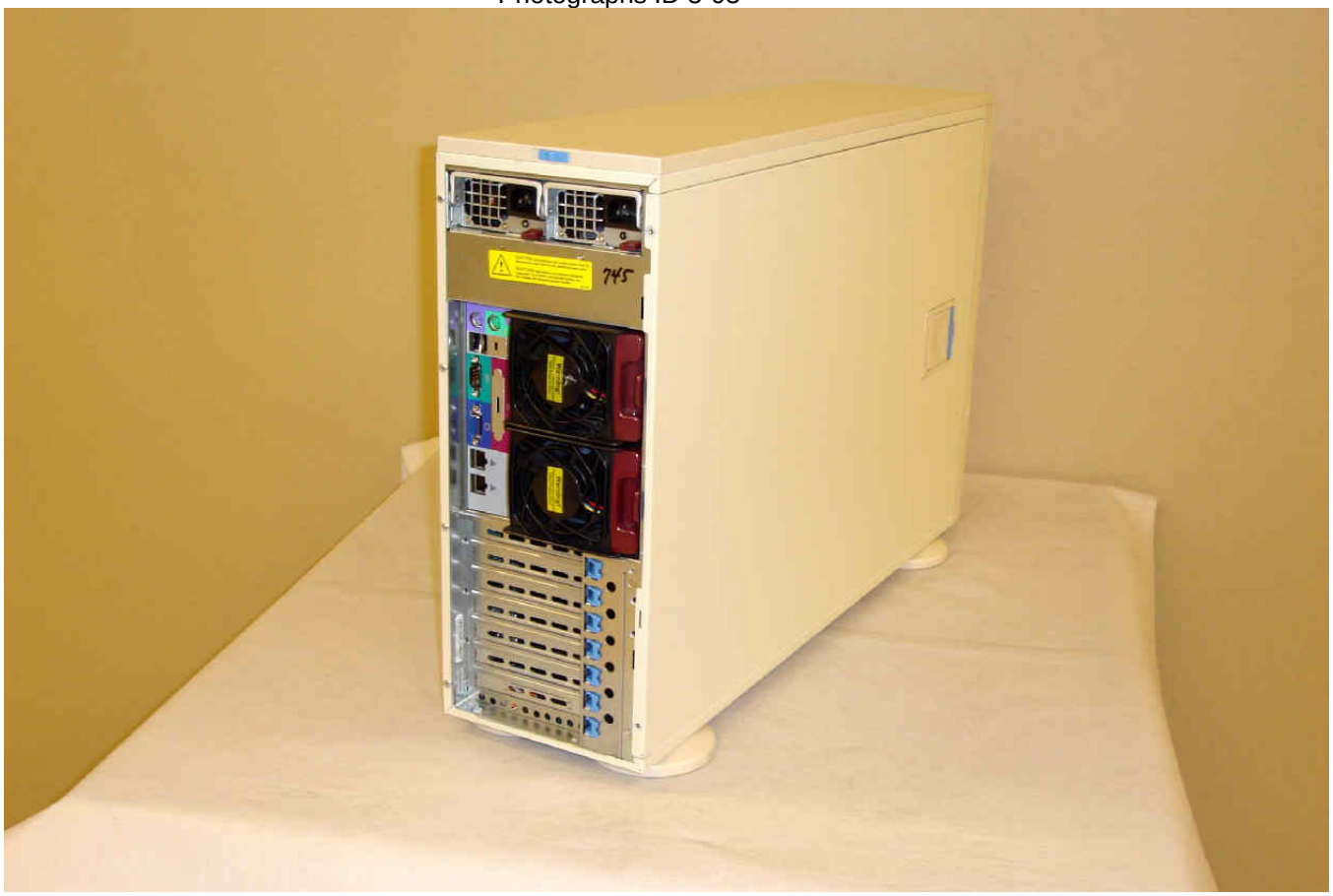
Photographs

Supplement Id	Description
3-01	745 Front View (Represents 745-8, 745-12)
3-02	745 Inside View (Represents 745-8, 745-12)
3-03	745 Rear View (Represents 745-8, 745-12)

Photographs ID 3-01

Photographs ID 3-02

Photographs ID 3-03



Enclosure

Manuals

Supplement Id	Description
6-01	Representative Installation / Operation Manual page regarding installation and maintenance. Note: Models numbers will be changed to 745-8, 745-12.

Manuals ID 6-01

Preface

About This Manual

This manual is written for professional system integrators and PC technicians. It provides information for the installation and use of the SuperWorkstation 7036A-T. Installation and maintenance shall be performed by experienced technicians only.

The SuperWorkstation 7036A-T is a dual processor system based on the SC733TQ-665B mid-tower chassis and the Super X8DAL-i serverboard. Please refer to our web site for an up-to-date list of supported processors.

Manual Organization

Chapter 1: Introduction

The first chapter provides a checklist of the main components included with the system and describes the main features of the Super X8DAL-i serverboard and the SC733TQ-665B chassis.

Chapter 2: Installation

This chapter describes the steps necessary to setup the system. If your workstation was ordered without the processor and memory components, this chapter will refer you to the appropriate sections of the manual for their installation.

Chapter 3: System Interface

Refer to this chapter for details on the system interface, which includes the functions and information provided by the control panel on the chassis as well as other LEDs located throughout the system.

Chapter 4: System Safety

You should thoroughly familiarize yourself with this chapter for a general overview of safety precautions that should be followed when installing and servicing the SuperWorkstation 7036A-T.

Enclosure

Miscellaneous

Supplement Id	Description
7-01	Manufacturer's Letter of Assurance

Misc ID 7-01

SUPERMICRO
Super Micro Computer, Inc.

HEADQUARTERS
980 Rock Avenue, San Jose, CA 95131 USA
Tel: 408-503-8000 Fax: 408-503-8008
www.supermicro.com

Underwriters Laboratories Inc.

To: Underwriters Laboratories

From: Super Micro Computer Inc.

Subject: National Differences (for Models 745-8, 745-12)
Report Reference E209323-A50-CB-1

This document confirms that Super Micro Computer Inc. will provide the following items needed to the accepting NCB along with the CB test report.

Markings and Safety Instructions - Safety instructions and markings in the language suitable for countries listed in the attached report will be provided at the time the CB test report is submitted to the accepting NCB.

EMC Test Report – Where detailed in the National Differences, an EMC Test report or Declaration of Conformity will accompany this product when sent to countries that require EMC test results as part of their certification process e.g. Korea.

We confirm that:

Power Supply Cords and Plugs – All power cords and plug assemblies provided with the unit will be certified and suitable for countries listed in the attached CB test report.

/SClee

(Client Signature)

Enclosure

Licenses

Supplement Id	Description
8-01	Component Licenses

License ID 8-01

CB Certificate and License for Ablecom Power Supply Model PWS-801-1R

License ID 8-01

INTERNATIONAL ELECTROTECHNICAL COMMISSION (IEC)
COMMISSION ELECTROTECHNIQUE INTERNATIONALE (CEI)

Ref. Certif. No.
DK-10871

IEC SYSTEM FOR CONFORMITY TESTING AND CERTIFICATION OF ELECTRICAL EQUIPMENT (IECEE) CB SCHEME

SYSTÈME CEI D'ESSAIS DE CONFORMITÉ ET DE CERTIFICATION DES EQUIPEMENTS ELECTRIQUES (IECEE) METHODE OC

CB TEST CERTIFICATE
CERTIFICAT D'ESSAI OC

Product *Produit*	Power Supply
Name and address of the applicant *Nom et adresse du demandeur*	Ablecom Technology Inc 5th Fl, #228, Liancheng Rd Chung Ho, Taipei Hsien 235 Taiwan
Name and address of the manufacturer *Nom et adresse du fabricant*	Ablecom Technology Inc 5th Fl, #228, Liancheng Rd Chung Ho, Taipei Hsien 235 Taiwan
Name and address of the factory *Nom et adresse de l'usine*	See Appendix
Rating and principal characteristics *Valeurs norminales et caractèristiques principales*	100-240 Vac, 10-4 A, 50-60 Hz, Class I, IPX0
Trade mark (if any) *Marque de fabrique (si elle existe)*	ABLECOM
Model/type Ref. *Ref. de type*	PWS-702A-1R, PWS-801-1R
Additional information (if necessary) *Information complémentaire (si nécessaire)*	O/P: +12 Vdc/57 A, +5 Vsb/4 A Total Power 700 W (For Model PWS-702A-1R), O/P: +12 Vdc/66 A, +5 Vsb/4 A Total Power 800 W (For Model PWS-801-1R)
A sample of the product was tested and found to be in conformity with *Un échantillon de ce produit a été essayé et a été considéré conforme à la*	PUBLICATION: IEC 60950-1:2001 EDITION: 1"
as shown in the Test Report Ref. No. which form part of this certificate *comme indiqué dans le Rapport d'essais numéro de référence qui constitue une partie de ce certificat*	E193726-A16-CB-1 issue date 2007-03-19

This CB Test Certificate is issued by the National Certification Body
Ce Certificate d'essai OC est établi par l'Organisme National de Certification

Date 2007-03-20

Signature
Karina Christiansen
Certification Manager

UL International Demko A/S
Lyskaer 8, P.O. Box 514
DK-2730 Herlev, Denmark
Telephone: +45 44856565
Fax: +45 44856500

Internal Ref.:
Sam Hsu

An Affiliate of
Underwriters Laboratories Inc.®

License ID 8-01

Appendix to
CB–Certificate No. DK–10871

Factory Location(s):

(1) Xiang Fa Electronics (D.G) Co., Ltd
Zheng Wen West Rd., Shi Jie Zhen Dongguan, Guangdong, China

(2) Acbel Electronic (Dong Guan) Co Ltd
Horng Yeh Industrial District, 17-28 Horng Yeh Blvd, Tang Xia Town,
Dongguan, Guangdong, China

Herlev, 2007-03-20

Karina Christiansen
Certification Manager

UL International Demko A/S
Lyskaer 8, P.O. Box 514
DK-2730 Herlev, Denmark
Telephone: +45 44856565
Fax: +45 44856500

An Affiliate of
Underwriters
Laboratories Inc.®

License ID 8-01

IEC IECEE CB SCHEME

Ref. Certif. No.
JPTUV-014626

IEC SYSTEM FOR MUTUAL RECOGNITION OF TEST CERTIFICATES FOR ELECTRICAL EQUIPMENT (IECEE) CB SCHEME

SYSTEME CEI D'ACCEPTATION MUTUELLE DE CERTIFICATS D'ESSAIS DES EQUIPEMENTS ELECTRIQUES (IECEE) METHODE OC

CB TEST CERTIFICATE
CERTIFICAT D'ESSAI OC

Product Produit	Redundant Module Switching Power Supply
Name and address of the applicant Nom et adresse du demandeur	Ablecom Technology Inc. 5th Fl., No. 228, Liancheng Rd. Chung Ho, Taipei Hsien 235 Taiwan
Name and address of the manufacturer Nom et adresse du fabricant	Ablecom Technology Inc. 5th Fl., No. 228, Liancheng Rd. Chung Ho, Taipei Hsien 235 Taiwan
Name and address of the factory Nom et adresse de l'usine	(See appendix for factories information)
Rating and principal characteristics Valeurs nominales et caractéristiques principales	Input : AC 100-240V; 50-60Hz; 10A-4A; Class I Output: DC +12V, 66A; +5Vsb, 4A; max. 800W
Trade mark (if any) Marque de fabrique (si elle existe)	ABLECOM
Model/type Ref. Ref. de type	PWS-801-1R
Additional information (if necessary) Information complémentaire (si nécessaire)	
A sample of the product was tested and found to be in conformity with Un échantillon de ce produit a été essayé et a été considéré conforme à la	IEC 60950-1:2001 inclusive CENELEC Common Modifications National differences see test report
As shown in the Test Report Ref. No.which forms part of this Certificate Comme indiqué dans le Rapport d'essais numéro de référence qui constitue une partie de ce Certificat	11007140 001

This CB Test Certificate is issued by the National Certification Body
Ce Certificat d'essai OC est établi par l'Organisme National de Certification

TÜV **TÜV Rheinland Group**

TÜV Rheinland Japan Ltd.
Shin Yokohama Daini Center Bldg.
3-19-5, Shin Yokohama, Kohoku-ku
Yokohama 222-0033 Japan
Phone + 81 45 470-1850
Fax + 81 45 473-5221
Mail: info@jpn.tuv.com
Web: www.tuv.com

Date: 05.05.2006

Signature: Dipl.-Ing. W. Hsu

10-06 CB 4.1a1

License ID 8-01

TÜV Rheinland Japan Ltd.
Member of TÜV Rheinland Group

TÜV Rheinland Group

Appendix to CB Certificate JPTUV-014626
Report Number: 11007140 001

PAGE 1 OF 1

Name and address of the manufacturer
Ablecom Technology Inc.
5th Fl., No. 228, Liancheng Rd.
Chung Ho, Taipei Hsien 235
Taiwan

Name and address of the factory(ies)
Shenzhen Huili Elec. Co., Ltd.

Blk. C, Bldg. 7, County 73, Baoan
Shenzhen, Guangdong
P.R. China

Xiang Fa Electronics (D.G) Co., Ltd.

Zheng Wen W. Rd., Shi Jie Town
Dong Guan City, Guangdong Province
P.R. China

Date: 05.05.2006

Dipl.-Ing. W. Hsu

Yokohama Head Office
Shin Yokohama Daini Center Bldg.
3-19-5, Shin Yokohama
Kohoku-ku, Yokohama 222-0033, Japan
Tel : +81-45-470-1850
Fax : +81-45-473-5221
e-mail: info@jpn.tuv.com

新横浜本社
〒222-0033 横浜市港北区新横浜3-19-5
新横浜第二センタービル
Tel : 045-470-1850
Fax : 045-473-5221
www.jpn.tuv.com

License ID 8-01

Zertifikat *Certificate*

TÜV

Zertifikat Nr. *Certificate No.* R 50084005

Blatt *Page* 0001

Ihr Zeichen *Client Reference*	Unser Zeichen *Our Reference*	Ausstellungsdatum	*Date of Issue (day/mo/yr)*
FH/SPC-604019-app	ZTW1-TCH- 10016759 001	08.05.2006	

Genehmigungsinhaber *License Holder*
Ablecom Technology Inc.
5th Fl., No. 228, Liancheng Rd.
Chung Ho, Taipei Hsien 235
Taiwan

Fertigungsstätte *Manufacturing Plant*
Shenzhen Huili Elec. Co., Ltd.
Blk. C, Bldg. 7, County 73, Baoan
Shenzhen, Guangdong
P.R. China

Prüfzeichen *Test Mark*
TÜV Rheinland Product Safety | BAUART GEPRÜFT / TYPE APPROVED

Geprüft nach *Tested acc. to*
EN 60950-1:2001+A11

Zertifiziertes Produkt *Certified Product* (Geräteidentifikation) *(Product Identification)*		**Lizenzentgelte - Einheit** *License Fee - Unit*
Einbau-Schaltnetzteil (Redundant Module Switching Power Supply)		
Bezeichnung (Type Designation)	: PWS-801-1R (ABLECOM)	10
Nennspannung (Rated Voltage)	: AC 100-240V, 50-60Hz	
Nennstrom (Rated Current)	: 10A-4A	
max. Umgebungstemperatur (max. Ambient Temperature)	: 50°C	
Schutzklasse (Protection Class)	: I	
Verschmutzungsgrad (Pollution Degree)	: 2	

Fortsetzung Blatt (continued on page) 02

10

ANLAGE (Appendix): 1

Dem Zertifikat liegt unsere Prüf- und Zertifizierungsordnung zugrunde.
Das Produkt entspricht den o.g. Anforderungen, die Herstellung wird überwacht.
This certificate is based on our Testing and Certification Regulation. The product fulfills above-mentioned-requirements, the production is subject to surveillance.

Zertifizierungsstelle

TÜV Rheinland Product Safety GmbH, Am Grauen Stein, D-51105 Köln
Tel.:(+49/221)8 06 - 13 71 Fax:(+49/221)8 06 - 39 35 e-mail: Althofff@de.tuv.com

Dipl.-Ing. F. Stoelzel

License ID 8-01

Zertifikat *Certificate*

TÜV

Zertifikat Nr. *Certificate No.*
R 50084005

Blatt *Page*
0002

Ihr Zeichen *Client Reference*	Unser Zeichen *Our Reference*	Ausstellungsdatum	*Date of Issue (day/mo/yr)*
FH/SPC-604019-app	ZTW1-TCH- 10016759 001	08.05.2006	

Genehmigungsinhaber *License Holder*
Ablecom Technology Inc.
5th Fl., No. 228, Liancheng Rd.
Chung Ho, Taipei Hsien 235
Taiwan

Fertigungsstätte *Manufacturing Plant*
Shenzhen Huili Elec. Co., Ltd.
Blk. C, Bldg. 7, County 73, Baoan
Shenzhen, Guangdong
P.R. China

Prüfzeichen *Test Mark*
TÜV Rheinland Product Safety | BAUART GEPRÜFT / TYPE APPROVED

Geprüft nach *Tested acc. to*
EN 60950-1:2001+A11

Zertifiziertes Produkt (Geräteidentifikation) *Certified Product (Product Identification)*

Lizenzentgelte - Einheit *License Fee - Unit*

Einbau-Schaltnetzteil (Redundant Module Switching Power Supply)

wie Blatt (as page) 01

Fortsetzung (Continuation)

Ausgangsspannungen : DC +12V +5Vsb
(Output Voltages)
Ausgangsströme : 66A 4A
(Output Currents)
max. Ausgangsleistung : 800W
(max. Output Power)

Vermerke : Primär-und Sekundärkreise sind gemäß Verfahren 1 nach Abschnitt 2.2 getrennt. Der Einbau muß gemäß der zugehörigen Einbauanweisung erfolgen. (Remarks : Primary and secondary circuits are separated according to method 1 of clause 2.2. The installation has to be carried out according to the attached installation instruction.)

TÜV Rheinland Product Safety GmbH — TÜV Rheinland — Zertifizierungsstelle

ANLAGE (Appendix): 1

Dem Zertifikat liegt unsere Prüf- und Zertifizierungsordnung zugrunde.
Das Produkt entspricht den o.g. Anforderungen, die Herstellung wird überwacht.
This certificate is based on our Testing and Certification Regulation. The product fulfills above-mentioned-requirements, the production is subject to surveillance.

Zertifizierungsstelle

TÜV Rheinland Product Safety GmbH, Am Grauen Stein, D-51105 Köln
Tel.:(+49/221)8 06 - 13 71 Fax:(+49/221)8 06 - 39 35 e-mail: Althofff@de.mv.com

Dipl.-Ing. F. Stoelzel

License ID 8-01

Zertifikat *Certificate*

TÜV

Zertifikat Nr. *Certificate No.*
R 50084005

Blatt *Page*
0003

Ihr Zeichen *Client Reference*	Unser Zeichen *Our Reference*	Ausstellungsdatum	*Date of Issue (day/mo/yr)*
FH/SPC-604019-app	ZTW1-TCH- 10016759 001	08.05.2006	

Genehmigungsinhaber *License Holder*
Ablecom Technology Inc.
5th Fl., No. 228, Liancheng Rd.
Chung Ho, Taipei Hsien 235
Taiwan

Fertigungsstätte *Manufacturing Plant*
Xiang Fa Electronics (D.G)
Co., Ltd.
Zheng Wen W. Rd., Shi Jie Town
Dong Guan City, Guangdong Province
P.R. China

Prüfzeichen *Test Mark*
TÜV Rheinland Product Safety | BAUART GEPRÜFT / TYPE APPROVED

Geprüft nach *Tested acc. to*
EN 60950-1:2001+A11

Zertifiziertes Produkt (Geräteidentifikation) *Certified Product (Product Identification)*

Lizenzentgelte - Einheit *License Fee - Unit*

Einbau-Schaltnetzteil (Redundant Module Switching Power Supply)

wie Blatt (as page) 01

Ergänzung (Addition)

Fertigungsstätte : siehe oben
(Factory) (see above)

TÜV Rheinland Product Safety GmbH – TÜV Rheinland – Zertifizierungsstelle

ANLAGE (Appendix): 1

Dem Zertifikat liegt unsere Prüf- und Zertifizierungsordnung zugrunde.
Das Produkt entspricht den o.g. Anforderungen, die Herstellung wird überwacht.
This certificate is based on our Testing and Certification Regulation. The product fulfills above-mentioned-requirements, the production is subject to surveillance.

Zertifizierungsstelle

TÜV Rheinland Product Safety GmbH, Am Grauen Stein, D-51105 Köln
Tel.:(+49/221)8 06 - 13 71 Fax:(+49/221)8 06 - 39 35 e-mail: Althofff@de.tuv.com

Dipl.-Ing. F. Stoelzel

License ID 8-01

CB Certificate for Compuware Technology Power Supply Model PWS-1K21P-1R

License ID 8-01

IEC IECEE CB SCHEME

Ref. Certif. No.
JPTUV-026699

IEC SYSTEM FOR MUTUAL RECOGNITION OF TEST CERTIFICATES FOR ELECTRICAL EQUIPMENT (IECEE) CB SCHEME

SYSTEME CEI D'ACCEPTATION MUTUELLE DE CERTIFICATS D'ESSAIS DES EQUIPEMENTS ELECTRIQUES (IECEE) METHODE OC

CB TEST CERTIFICATE
CERTIFICAT D'ESSAI OC

Product Produit	Switching Power Supply
Name and address of the applicant Nom et adresse du demandeur	Compuware Technology Inc. 5F, No. 232, Liancheng Rd. Chung-Ho City, Taipei County 235 Taiwan
Name and address of the manufacturer Nom et adresse du fabricant	Compuware Technology Inc. 5F, No. 232, Liancheng Rd. Chung-Ho City, Taipei County 235 Taiwan
Name and address of the factory Nom et adresse de l'usine	See additional page(s)
Rating and principal characteristics Valeurs nominales et caractéristiques principales	Input : 1000W: AC 100-140V; 11.5-8A; 50-60Hz; Class I 1200W: AC 180-240V; 8-5.5A; 50-60Hz; Class I Output: 1000W: DC +12V, 83A; +5Vsb, 4A; max. output 1000W 1200W: DC +12V, 100A; +5Vsb, 4A; max. output 1200W
Trade mark (if any) Marque de fabrique (si elle existe)	COMPUWARE
Model/type Ref. Ref. de type	CPR-1xxx-xaxbc (x = 0-9; a, b, c = A-Z)
Additional information (if necessary) Information complémentaire (si nécessaire)	For model differences, refer to the test report.
A sample of the product was tested and found to be in conformity with Un échantillon de ce produit a été essayé et a été considéré conforme à la	IEC 60950-1:2001 National differences see test report
As shown in the Test Report Ref. No. which forms part of this Certificate Comme indiqué dans le Rapport d'essais numéro de référence qui constitue une partie de ce Certificat	11016439 001

This CB Test Certificate is issued by the National Certification Body
Ce Certificat d'essai OC est établi par l'Organisme National de Certification

TÜVRheinland®

TÜV Rheinland Japan Ltd.
Global Technology Assessment Center
4-25-2 Kita-Yamata, Tsuzuki-ku
Yokohama 224-0021 Japan
Phone + 81 45 914-3888
Fax + 81 45 914-3354
Mail: info@jpn.tuv.com
Web: www.tuv.com

Date: 22.04.2009

Signature: Dipl.-Ing. W. Hsu

10061 CB 1.07

License ID 8-01

IEC IECEE CB SCHEME

Ref. Certif. No.

JPTUV-026699

PAGE 2 OF 2

1. Amax Electronics
   Wusha Xinan Industry Area
   Changan Town
   Dongguan City, Guangdong Province
   P.R. China

2. ENHANCE ELECTRONICS CO.,
   LTD. (DONGGUAN)
   San Land Industrial Area,
   Fong Kang Town
   Dongguang, Guangdong, P.R. China

Additional information (if necessary)
Information complémentaire (si nécessaire)

Date: 22.04.2009 Signature: Dipl.-Ing. W. Hsu

10/061a 5.06

License ID 8-01

IEC IECEE CB SCHEME

Ref. Certif. No.
JPTUV-026700

IEC SYSTEM FOR MUTUAL RECOGNITION OF TEST CERTIFICATES FOR ELECTRICAL EQUIPMENT (IECEE) CB SCHEME

SYSTEME CEI D'ACCEPTATION MUTUELLE DE CERTIFICATS D'ESSAIS DES EQUIPEMENTS ELECTRIQUES (IECEE) METHODE OC

CB TEST CERTIFICATE
CERTIFICAT D'ESSAI OC

Product Produit	Switching Power Supply
Name and address of the applicant Nom et adresse du demandeur	Compuware Technology Inc. 5F, No. 232, Liancheng Rd. Chung-Ho City, Taipei County 235 Taiwan
Name and address of the manufacturer Nom et adresse du fabricant	Compuware Technology Inc. 5F, No. 232, Liancheng Rd. Chung-Ho City, Taipei County 235 Taiwan
Name and address of the factory Nom et adresse de l'usine	See additional page(s)
Rating and principal characteristics Valeurs nominales et caractéristiques principales	Input : 1000W: AC 100-140V; 11.5-8A; 50-60Hz; Class I 1200W: AC 180-240V; 8-5.5A; 50-60Hz; Class I Output: 1000W: DC +12V, 83A; +5Vsb, 4A; max. output 1000W 1200W: DC +12V, 100A; +5Vsb, 4A; max. output 1200W
Trade mark (if any) Marque de fabrique (si elle existe)	SUPERMICRO
Model/type Ref. Ref. de type	PWS-1Kxxa-1R (x = 0-9; a = A-Z or blank)
Additional information (if necessary) Information complémentaire (si nécessaire)	For model differences, refer to the test report.
A sample of the product was tested and found to be in conformity with Un échantillon de ce produit a été essayé et a été considéré conforme à la	IEC 60950-1:2001 National differences see test report
As shown in the Test Report Ref. No. which forms part of this Certificate Comme indiqué dans le Rapport d'essais numéro de référence qui constitue une partie de ce Certificat	11016439 001

This CB Test Certificate is issued by the National Certification Body
Ce Certificat d'essai OC est établi par l'Organisme National de Certification

TÜVRheinland®

TÜV Rheinland Japan Ltd.
Global Technology Assessment Center
4-25-2 Kita-Yamata, Tsuzuki-ku
Yokohama 224-0021 Japan
Phone + 81 45 914-3888
Fax + 81 45 914-3354
Mail: info@jpn.tuv.com
Web: www.tuv.com

Date: 22.04.2009

Signature: Dipl.-Ing. W. Hsu

10061 CB 1.07

License ID 8-01

IEC IECEE CB SCHEME

Ref. Certif. No.

JPTUV-026700

PAGE 2 OF 2

1. Amax Electronics
   Wusha Xinan Industry Area
   Changan Town
   Dongguan City, Guangdong Province
   P.R. China

2. ENHANCE ELECTRONICS CO.,
   LTD. (DONGGUAN)
   San Land Industrial Area,
   Fong Kang Town
   Dongguang, Guangdong, P.R. China

Additional information (if necessary)
Information complémentaire (si nécessaire)

Date: 22.04.2009 Signature: Dipl.-Ing. W. Hsu

10/061a 9.06

License ID 8-01

Component License for Sanyo Denki Fans

License ID 8-01

Zertifikat *Certificate*

TÜV

Zertifikat Nr. *Certificate No.* R 50037258

Blatt *Page* 0005

Ihr Zeichen *Client Reference*	Unser Zeichen *Our Reference*	Ausstellungsdatum	*Date of Issue (day/mo/yr)*
K0001189	ZJL-MTE- 12007257 005	16.05.2005	

Genehmigungsinhaber *License Holder*
Sanyo Denki Co., Ltd.
1-15-1 Kita-Otsuka
Toshima-ku, Tokyo 170-8451
Japan

Fertigungsstätte *Manufacturing Plant*
DONG GUAN MACE TECH CORP.
Golden Lake Industrial District,
Qishi Town,
Dongguan City, Guangdong
P.R. China

Prüfzeichen *Test Mark*
TÜV Rheinland Product Safety | BAUART GEPRÜFT / TYPE APPROVED

Geprüft nach *Tested acc. to*
EN 60950-1:2001

Zertifiziertes Produkt (Geräteidentifikation) *Certified Product (Product Identification)*	Lizenzentgelte - Einheit *License Fee - Unit*
Ventilator BRUSHLESS DC FAN MOTOR	
Additions	
Type Designation : BLDC San Ace 80 Series	
Model : 9G08vvP1axxy	1
vv = 12 or 48	
a = F, H or G	1
xx = 01 99	
y = 1 or blank	
Rated Voltage : DC 12V 48V	
Rated Current : max. 0.9A max. 0.27A	
Factory : (see above)	

Remark : Reissue of R 50037258 page 0004, due to change of suffix.

2

ANLAGE (Appendix): 1.1, 1.2, 1.3

Dem Zertifikat liegt unsere Prüf- und Zertifizierungsordnung zugrunde.
Das Produkt entspricht den o.g. Anforderungen, die Herstellung wird überwacht.
This certificate is based on our Testing and Certification Regulation. The product fulfills above-mentioned-requirements, the production is subject to surveillance.

TÜV Rheinland Product Safety GmbH – TÜV Rheinland – Zertifizierungsstelle

Zertifizierungsstelle

TÜV Rheinland Product Safety GmbH, Am Grauen Stein, D-51105 Köln
Tel.:(+49/221)8 06 - 13 71 Fax:(+49/221)8 06 - 39 35 e-mail: Althoff@de.tuv.com

Dipl.-Ing. R. Keller

License ID 8-01

Zertifikat *Certificate*

TÜV

Zertifikat Nr. *Certificate No.*: R 50037258
Blatt *Page*: 0019

Ihr Zeichen *Client Reference*	Unser Zeichen *Our Reference*	Ausstellungsdatum	*Date of Issue (day/mo/yr)*
K0001698	ZJL-HIR- 12007257 019	07.06.2007	

Genehmigungsinhaber *License Holder*
Sanyo Denki Co., Ltd.
1-15-1 Kita-Otsuka
Toshima-ku, Tokyo
170-8451 JAPAN

Fertigungsstätte *Manufacturing Plant*
Sanyo Denki Co., Ltd.
Fujiyama Factory
4016 Fujiyama
Ueda-shi, Nagano
386-1212 JAPAN

Prüfzeichen *Test Mark*
TÜV Rheinland Product Safety — BAUART GEPRÜFT — TYPE APPROVED

Geprüft nach *Tested acc. to*
EN 60950-1:2001+A11

Zertifiziertes Produkt (Geräteidentifikation) *Certified Product* (*Product Identification*)

Lizenzentgelte - Einheit *License Fee - Unit*

Ventilator BRUSHLESS DC FAN MOTOR

Addition

Type Designation	:	BLDC San Ace 80 Series	
Model	:	9G08vvPlaxxy	1
		vv = 12, 24, 27 or 48	1
		a = F, H, G, K, J or A	
		xx = 01 - 99	
		y = 1 or blank	
Rated Voltage	:	DC12V, DC24V, DC27V, or DC48V	
Rated Current (max.)	:	2.0A, 0.56A, 0.62A, or 0.27A	

Remarks : The labelling requirements acc. to EU Directive 2001/95 have to be observed for distribution within the EEA.
Reissue of R 50037258 page 0018, due to additioal combination of suffix.

2

ANLAGE (Appendix): 1.1-1.3, 2, 2.4-2.7

Dem Zertifikat liegt unsere Prüf- und Zertifizierungsordnung zugrunde. Das Produkt entspricht den o.g. Anforderungen, die Herstellung wird überwacht. This certificate is based on our Testing and Certification Regulation. The product fulfills above mentioned requirements, the production is subject to surveillance.

TÜV Rheinland Product Safety GmbH — TÜV Rheinland — Zertifizierungsstelle

Zertifizierungsstelle

Dipl.-Ing. M. Geiser

TÜV Rheinland Product Safety GmbH, Am Grauen Stein, D-51105 Köln
Tel.: (+49/221)8 06 - 13 71 e-mail: cert-validity@de.tuv.com
Fax: (+49/221)8 06 - 39 35 http://www.tuv.com/safety

License ID 8-01

Zertifikat *Certificate*

TÜVRheinland®

Zertifikat Nr. *Certificate No.* R 2051039 | **Blatt** *Page* 24

Ihr Zeichen *Client Reference*	**Unser Zeichen** *Our Reference*	**Ausstellungsdatum**	*Date of Issue (day/mo/yr)*
K0001923	ZJL-HIR- 02061544 019	03.03.2008	

Genehmigungsinhaber *License Holder*
Sanyo Denki Co., Ltd.
1-15-1 Kita-Otsuka
Toshima-ku, Tokyo
170-8451 JAPAN

Fertigungsstätte *Manufacturing Plant*
Sanyo Denki Philippines, Inc.
#2 Block F-1
Subic Techno Park Bldg.
Along Arganout Highway
Boton Area, SBF
Philippines

Prüfzeichen *Test Mark*
TÜV Rheinland Product Safety | BAUART GEPRÜFT | TYPE APPROVED

Geprüft nach *Tested acc. to*
EN 60950-1:2001+A11

Zertifiziertes Produkt *Certified Product* (Geräteidentifikation) *(Product Identification)*	**Lizenzentgelte - Einheit** *License Fee - Unit*
Ventilator Brushless DC Fan Motor	
Addition	
Type Designation : San Ace 80 series	
Model : 109P08vvP2sxxy	1
vv = 12	1
s = C	
xx = 01 - 99	
y = 1 or blank	
Rated Voltage : DC 12V	
Rated Current : 0.55A	
Remark : The labelling requirements acc. to EU Directive 2001/95 have to be observed for distribution within the EEA.	
	2

ANLAGE (Appendix): 3

Dem Zertifikat liegt unsere Prüf- und Zertifizierungsordnung zugrunde. Das Produkt entspricht den o.g. Anforderungen, die Herstellung wird überwacht. This certificate is based on our Testing and Certification Regulation. The product fulfills above mentioned requirements, the production is subject to surveillance.

TÜV Rheinland Product Safety GmbH — TÜVRheinland — Zertifizierungsstelle

Zertifizierungsstelle

Dipl.-Ing. M. Geiser

TÜV Rheinland Product Safety GmbH, Am Grauen Stein, D-51105 Köln
Tel.: (+49/221)8 06 - 13 71 e-mail: cert-validity@de.tuv.com
Fax: (+49/221)8 06 - 39 35 http://www.tuv.com/safety

License ID 8-01

Component License for Nidec Fan

License ID 8-01

Page 1 of 10

Attachment 1 to Bauart Certificate Number B 03 08 28002 018

Company: Nidec America Corporation
318 Industrial Lane, Torrington Industrial Park
Torrington, CT 06790 USA

Tested according to: IEC 60950-1 Edition 1.0 (2001)

noAdditional Models:

Series	Model Numbers	Rated Input Current	Rated Input Voltage
D03X	D03X-05aL	0.08 A	5 V DC
TA120DC	34615	0.06 A	12 V DC
TA120DC	34449	0.11 A	5 V DC
TA140DC	34922, D03P-12aS3	0.09 A	12 V DC
D03X	D03X-05aS2	0.21 A	5 V DC

Series	Model Numbers	Rated Input Current	Rated Input Voltage
D04	D04G-05aS1	0.25 A	5 V DC
TA150DC	34999	0.19 A	5 VDC
TA150DC	35697	0.20 A	5 VDC
TA150DC	33830	0.08 A	12 V DC
TA150DC	33842	0.11 a	12 V DC
TA150DC	34246	0.20 A	5 V DC
TA150DC	34247	0.10 A	5 V DC
TA150DC	34635	0.07 A	12 V DC
TA150DC	34658	0.36 A	5 V DC
TA150DC	34702	0.09 A	12 V DC
TA150DC	D04G-12aS1	0.11 A	12 V DC
TA150DC	34736	0.15 A	24 V DC
TA150DC	34636, 34949	0.12 A	12 V DC
TA150DC	34637, D04G-12aH	0.13 A or 0.15 A	12 V DC
TA150DC	34638	0.06 A	24 V DC
TA150DC	34639	0.07 A	24 V DC
TA150DC	34640	0.08 A	24 V DC
TA150DC	35003	0.37 A	5 V DC
TA150DC	34792	0.27 A	12 V DC
TA150DC	34955	0.20 A	12 V DC
TA150DC	34957	0.29 A	12 V DC
TA150DC	34956	0.12 A	24 V DC
TA150DC	34958	0.18 A	24 V DC
D04	D04R-12aH	0.15 A	12 V DC
D04	D04R-12aM	0.10 A	12 V DC
TA150DC	35081	0.09 A	12 V DC or 10.2-13.8 V DC
TA150DC	35083	0.15 A	12 V DC or 10.2-13.8 V DC
TA150DC	35082	0.07 A	24 V DC or 20.4-27.6 V DC
TA150DC	35084	0.09 A	24 V DC or 20.4-26.4 V DC
D04G	D04G-24aS2	0.17 A	24 V DC
TA150DC	35295	0.85 A	12 V DC
TA150DC	34580	0.09 A	5 V DC
TA150DC	35425	0.13 A	5 V DC
D04X	D04X-05aS3	0.13 A	5 V DC
TA150DC	35404	0.18 A	12 V DC
DA150DC	35423, 35585,35614	1.0 A	12 V DC
DA150DC	35515, 35573	1.5 A	12 V DC
TA150DC	35532	0.14 A	12 V DC
VA150DC	35584, 35444	0.45 A	12 V DC
DA150DC	35583	0.66 A	12 V DC
DA150DC	35596	0.86 A	12 V DC
VA150DC	35615	0.53 A	12 V DC

DC Fans 30 mm or 120 or.../rev32
December 14, 2007

License ID 8-01

Attachment 1 to Bauart Certificate Number B 03 08 28002 018
Company: Nidec America Corporation
318 Industrial Lane, Torrington Industrial Park
Torrington, CT 06790 USA

Tested according to: IEC 60950-1 Edition 1.0 (2001)

TA150DC	34892	0.10 A	12 V DC
VA150DC	35642	0.69 A	12 V DC
D04X	D04X-09aL	0.05 A	9 V DC

DICR, 40x56 mm	a40W12BS2AC	1.54 A	12 V DC or 10.2 V DC – 13.8 V DC
40 x 56 mm	a40W12BS1BC	1.00 A	12 V DC
40 x 56 mm	a40W12BS4AC	1.00 A	12 V DC or 10.2-13.8 VDC
TA150DC	33903	0.08 A	24 V DC
40 x 56 mm	a40W12BS5AC	0.80 A	12 V DC or 10.2-13.8 V DC
a40S	a40S12BGA5	0.40 A	12 V DC or 10.2 V DC – 13.8 V DC
DICR, 40X56mm	a40W12BS2AC	1.54 A	12 V DC or 10.2 V DC–13.8 V DC
a40S	a40S12BGA5	0.40 A	12V DC or 10.2 V DC–13.8 V DC
a40S	a40S12BS1A5	0.37 A	12 V DC or 10.2 V DC – 13.8 V DC
a40X	a40X12MLZ7	0.05 A	12 V DC
a40X	a40X12MMZ7	0.07 A	12 V DC
a40X	a40X12MHZ7	0.10 A	12 V DC
a40S	a40S12BUA5	0.55 A	12 V DC or 10.2-13.8 V DC
DICR, 40x56 mm	a40W12BGAC	1.75 A	12 V DC or 10.2-13.8 V DC
a40S	a40S12BHA5	0.17 A	12 V DC or 10.2-13.8 V DC
a60T	a60T12MGA7	0.11 A	12 V DC
DICR, 40x56 mm	a40W12BHAC	1.10 A	12 V DC or 12-13.8 V DC
40 x 28 mm	a40S12BS4A5	0.73 A	12 VDC or 10.2-13.8 V DC
TA150DC	35705	0.07 A	12 V DC
40 x 28 mm	a40S12BS2A5	0.29 A	12 V DC
TA150DC	35713	0.20 A	12 V DC
VA150DC	a40S12BMA5	0.12 A	12 V DC
DICR, 40x56mm	a40W12BS7AC	1.40 A	12 V DC
40 x 10 mm	a40X05MLZ7	0.10 A	5 V DC

Additional Models:

Series	Model Numbers	Rated Input Current	Rated Input Voltage
TA200DC	35569	0.055 A	12 V DC
TA200DC	34571	0.07 A	12 V DC
TA200DC	34573, D05X-12aM	0.11 A	12 V DC
TA200DC	34734	0.12 A	5 V DC
TA200DC	34735	0.25 A	5 V DC
TA200DC	34834	0.15 A	8 V DC
TA200DC	35019	0.23 A	6.5 V DC
TA200DC	35139	0.15 A	15 V DC
TA200DC	34666	0.07 A	12 V DC
TA200DC	34669	0.08 A	24 V DC
TA200DC	35456	0.06 A	12 V DC
TA200DC	35520	0.024 A	12 V DC
TA200DC	34667	0.11 A	12 V DC

DC Fans 30 mm or 120 or.../rev32
December 14, 2007

License ID 8-01

Attachment 1 to Bauart Certificate Number B 03 08 28002 018
Company: Nidec America Corporation
318 Industrial Lane, Torrington Industrial Park
Torrington, CT 06790 USA

Tested according to: IEC 60950-1 Edition 1.0 (2001)

D06T	D06T-12aS7	0.42 A	12 VDC
TA225DC	35198	0.14 A	12 V DC
TA225DC	34945	0.10 A	12 V DC
TA225DC	35086	0.16 A	12 V DC
TA225DC	34811	0.19 A	12 V DC
TA225DC	34385	0.08 A	24 V DC
TA225DC	34387	0.09 A	24 V DC
TA225DC	34745	0.10 A	24 V DC
TA225DC	34389	0.13 A	24 VDC
TA225DC	34391	0.14 A	24 V DC
TA225DC	34487	0.33 A	5 V DC
TA225DC	D06R-12aS2	0.07 A	12 V DC
TA225DC	34766	0.08 A	12 V DC
TA225DC	33955	0.09 A	12 V DC
TA225DC	33960, 34952, 34856	0.13 A	12 V DC
TA225DC	33965, D06R-12aS9, 35018	0.16 A	12 V DC
TA225DC	34527	0.06 A	24 V DC
TA225DC	34140	0.07 A	24 V DC
TA225DC	34145	0.08 A	24 V DC
60 x 38 mm	a60E12BS1B5	1.6 A	12 V DC or 10.8-12.6 V DC

D06A	D06A-24aS8	0.15 A	24 V DC
D06R	D06R-24aS1	0.15 A	24 V DC
VA225DC	35554	0.39 A	12 V DC
D06X	D06X-12aS4	0.10 A	12 V DC
TA225DC	35261	0.30 A	12 V DC
TA225DC	35116	0.12 A	12 V DC
TA225DC	34150	0.10 A	24 V DC
TA225DC	34591	0.10 A	12 V DC
TA225DC	34596	0.13 A	12 V DC
TA225DC	34587	0.17 A	12 V DC
D06	D06T-24SS1	0.18 A	24 V DC
TA225DC	33394	0.09 A	12 V DC
VA225DC	35595	2.2 A	12 V DC
a6oE	a60E12BUA5	2.30 A	12 V DC or 10.2 – 13.8 V DC
TA225DC	33399	0.11 A	12 V DC
TA225DC	33402	0.14 A	12 V DC
TA225DC	33404	0.18 A	12 V DC
TA225DC	33515	0.28 A	12 V DC
A60E	a60E12BS2A5	0.38 A	12 V DC
A60E	a60E12BUA7	2.10 A	12 V DC
A60E	a60E12BUA5	2.30 A	12 V DC or 10.2-13.8 V DC
TA225DC	34418	0.28 A	12 V DC
TA225DC	D06T-12aS1	0.28 A	12 V DC
TA225DC	D06T-12aS2	0.28 A	12 V DC
TA225DC	34605	0.58 A	12 V DC
TA225DC	35055	0.07 A	15 V DC
TA225DC	35061	0.42 A	12 V DC
VA225DC	35073, 35140	1.1 A	12 V DC
TA225DC	35001	1.63 A	12 V DC
TA225DC	35200	0.22 A	12 V DC
D06	D06T-12aS15	0.18 A	12 V DC
VA225DC	35271	0.9 A	12 V DC

DC Fans 30 mm or 120 or.../rev32
December 14, 2007

License ID 8-01

Page 4 of 10
Attachment 1 to Bauart Certificate Number B 03 08 28002 018
Company: Nidec America Corporation
318 Industrial Lane, Torrington Industrial Park
Torrington, CT 06790 USA

Tested according to: IEC 60950-1 Edition 1.0 (2001)

D06	D06A-24aS5	0.10 A	24 V DC
D06E	D06E-12aS3	1.0 A	12 V DC or 12-12.6 V DC
TA225DC	35376	0.07 A	12 V DC
TA225DC	34384	0.11 A	12 V DC
TA225DC	34386	0.14 A	12 V DC
TA225DC	34388	0.18 A	12 V DC
TA225DC	34390	0.22 A	12 V DC
VA225DC	35348	0.88 A	18 V DC
TA225DC	35376	0.07 A	12 V DC
VA225DC	35388	1.05 A	12 V DC
D06T	D06T-24aS18	0.14 A	24 V DC
D06K	D06K-24aU	0.10 A	24 V DC or 24-27.6 V DC
TA225DC	35467	0.09 A	12 V DC
TA225DC	35466	0.05 A	12 V DC
D06R	D06R-12aH	0.10 A	12 V DC
TA225DC	35572	0.17 A	12 V DC
TA225DC	35441	1.50 A	12 V DC
VA225DC	35465	1.0 A	12 V DC
60x38mm	a60E12BS1A5	2.0 A	12 V DC
D06T	D06T-12aS16	0.23 A	12 V DC
VA225DC	35595	2.2 A	12 V DC
D06T	D06T-24aS5	0.14 A	24 V DC
60x25 mm	a60T12MS1A7	0.21 A	12 V DC
D06K	D06K-24aS9	0.08 A	24 V DC or 20.4 – 27.6 V DC
60x25 mm	a60T12MHA7	0.09 A	12 V DC
60x15 mm	a60R12MMAB	0.09A	12 V DC
60 x 25 mm	35717	0.18 A	24 V DC
VA225DC	a60E12BS1A7	2.45 A	12 V DC or 7.0-13.8 V DC
60 x 15 mm	a60R12MLAB	0.05 A	12 V DC

Additional Models:

Series	Model Numbers	Rated Input Current	Rated Input Voltage
D07A	D07A-12aS3	0.13 A	12 V DC
D07R	D07R-12aS8, 35384	0.05 A	12 V DC
TA275DC	34801	0.21 A	12 VDC
TA275DC	34950	0.44 A	12 V DC
TA275DC	35163	0.20 A	12 VDC
TA275DC	35624	0.22 A	12 V DC
D07R	D07R-12aU	0.29 A	12 V DC
D07A	D07A-12aM	0.16 A	12 V DC
D07A	D07A-12aL	0.10 A	12 V DC
TA275DC	35392	0.43 A	12 V DC
TA275DC	35506	0.45 A	12 V DC
TA275DC	35427	0.33 A	12 V DC
TA275DC	E35427	0.32 A	12 V DC
TA275DC	35598	0.48 A	12 V DC
TA225DC	35652	0.70 A	12 V DC
a70E	a70E12BUA5	1.33 A	12 V DC or 12-13.8 V DC
60x38 mm	V60E12BGA7	1.65 A	12 V DC or 10.2-13.8 V DC
60x38 mm	V60E12BHA7	1.05 A	12 V DC or 7-13.8 V DC
70 x 25 mm	a70T12MHA9	0.24 A	12 V DC
70 x 15 mm	a70R12MS1BB	0.11 A	12 V DC

DC Fans 30 mm or 120 or.../rev32
December 14, 2007

License ID 8-01

Attachment 1 to Bauart Certificate Number B 03 08 28002 018
Company: Nidec America Corporation
318 Industrial Lane, Torrington Industrial Park
Torrington, CT 06790 USA

Tested according to: IEC 60950-1 Edition 1.0 (2001)

Series	Model Numbers	Rated Input Current	Rated Input Voltage
TA275DC	35701	0.39 A	12 V DC
TA300DC	35094	0.09 A	12 V DC
80 x 38 mm	a80E12BS1A5	0.90 A	12 V DC or 7-13.8 V DC
D08	D08R-12aL	0.09 A	12 V DC
TA300DC	34611	0.13 A	12 V DC
D08	D08R-12aM	0.13 A	12 V DC
TA300DC	34612, 35380	0.18 A	12 V DC
D08	D08R-12aH	0.18 A	12 V DC
TA300DC	34815	0.29 A	11.5 V DC
TA300DC	34900	0.09 A	10 V DC
TA300DC	34689	0.20 A	12 V DC
TA300DC	34997	0.26 A	12 VDC
D08	D08A-12aS3	0.50 A	12 V DC
TA300DC	34690	0.11 A	24 V DC
TA300DC	35011	0.17 A	12 V DC
TA300DC	33411	0.13 A	24 V DC
TA300DC	33407	0.18 A	24 V DC
TA300DC	35253	0.14 A	12 VDC
TA300DC	35254	0.19 A	12 V DC
D08A	D08A-24aS2	0.23 A	24 V DC
TA300DC	35249	0.37 A	12 V DC
TA300DC	35133	0.44 A	24 V DC
TA300DC	34683	0.08 A	12 V DC
TA300DC	35613	0.25 A	12 V DC
TA300DC	33406	0.29 A	12 V DC
VA300DC	35072	0.90 A or 1.1 A	12 V DC
D08A	D08A-24aU	0.11 A	24 V DC
D08T	D08T-12aS12	0.43 A	12 V DC
TA300DC	34685	0.11 A	12 V DC
VA300DC	35132	0.45 A	24 V DC
TA300DC	35294	0.16 A	24 V DC
VA300DC	35375	0.60 A	12 V DC
D08A	D08A-24aG	0.09 A	24 V DC
D08A	D08A-24aH	0.07 A	24 V DC
TA300DC	35494	0.09 A or 0.045 A	12 V DC
VA300DC	35450	0.25 A	48 VDC
TA300DC	35373	0.69 A	12 V DC
D08K	D08K-12aS1	0.16 A	12 V DC or 12-13.8 V DC
D08K	D08K-24aS1	0.10 A	24 V DC or 24-27.6 V DC
TA300DC	35563	0.12 A	24 V DC
D08A	D08A-12aG	0.14 A	12 V DC
TA300DC	35538	0.31A	12 V DC
TA300DC	33412	0.15 A	12 V DC
D08K	D08K-24aU	0.13 A	24 V DC or 24-27.6 V DC
V80E	a80E12BS1A7	1.46 A	12 V DC
80 x 25 mm	a80T12MGA7	0.14A	12 V DC
D08A	D08A-12aM	0.08 A	12 V DC
TA300DC	35673	0.13 A	12 V DC
D09E, TA350DC	D09E-12aM, 35676	0.28A	12 V DC
a80E	a80E12BGA7	1.73 A	12 V DC or 10.2 – 13.8 V DC
a80E	H80E12BUA7	1.76 A	12 V DC or 10.2-13.8 V DC
80 x 25 mm	a80TI2MS1A7	0.30 A	12 V DC

DC Fans 30 mm or 120 or .../rev32
December 14, 2007

License ID 8-01

Attachment 1 to Bauart Certificate Number B 03 08 28002 018
Company: Nidec America Corporation
318 Industrial Lane, Torrington Industrial Park
Torrington, CT 06790 USA

Tested according to: IEC 60950-1 Edition 1.0 (2001)

TA300DC	35691	0.10 A	12 V DC
80x38 mm	a80E12BS2A7	1.5 A	12 V DC or 12-13.8 V DC
80x38 mm	a80E12BHA7	0.80 A	12 V DC
80 x 38 mm	H80E12BS1A7	1.76 A	12 VDC or 10.2-13.8 VDC
80x38 mm	a80E12BS3A7	3.0 A	12 VDC
80 x38 mm	a80E12BUA7	2.84 A	12 VDC or 10.2-12 VDC
80 x 25 mm	a80T12MMA7	0.08 A	12 V DC
80 x 25	a80T12MS4A7	0.28 A	12 VDC
80 x 25 mm	a80T12MUA7	0.19 A	12 VDC
80 x 15 mm	a80R12MLAB	0.12 A	12 VDC
TA300DC	35699	0.44 A	12 VDC

Additional Models:

Series	Model Numbers	Rated Input Current	Rated Input Voltage
VA350DC	35208	1.1 A	12 V DC
TA350DC	34805	0.28 A	12 V DC
TA350DC	34789	1.0 A	12 VDC
TA350DC	33416	0.11 A	12 V DC
TA350DC	33418	0.16 A	12 V DC
TA350DC	33420	0.21 A	12 V DC
TA350DC	33422	0.29 A	12 V DC
TA350DC	34261, 34705	0.28 A	24 V DC
TA350DC	33503	0.40 A	12 V DC
TA350DC	34422	0.40 A	12 V DC
TA350DC	34138, 34709	0.50 A	12 V DC
TA350DC	34474	0.20 A	24 V DC
TA350DC	34756	0.47 A	12 V DC
TA350DC	34650	0.64 A	12 V DC
TA350DC	34903	0.15 A	12 V DC
TA350DC	34975	0.80 A	12 V DC
TA350DC	35105, 35119	1.8 A	12 V DC
D09	D09A-24aG	0.11 A	24 V DC
TA350DC	35172	0.55 A	12 VDC or 10.2-13.8 V DC
TA350DC	35252	0.20 A	12 V DC
TA350DC	34880	0.27 A	12 V DC
TA350DC	35291	2.3 A	12 V DC
TA350DC	34404	0.21 A	12 V DC
TA350DC	35403	0.15 A	24 V DC
TA350DC	34908	0.15 A	24 V DC
D09C	D09C-24aS5	0.36 A	24 V DC
TA350DC	35367	1.21 A	12 V DC
TA350DC	35372	0.19 A	48 V DC or 48-56 V DC
TA350DC	34722	0.13 A	12 V DC
TA350DC	34901	0.08 A	12 V DC
TA350DC	35131	0.53 A	24 V DC
TA350DC	35519	0.16 A	24 V DC
TA350DC	35500	0.23 A	12 V DC
D09A	D09A-12aL	0.08 A	12 V DC
D09A	D09A-12aM	0.10 A	12 V DC
D09A	D09A-12aH	0.15 A	12 V DC
D09A	D09A-12aG	0.20 A	12 V DC

DC Fans 30 mm or 120 or.../rev32
December 14, 2007

License ID 8-01

Page 7 of 10
Attachment 1 to Bauart Certificate Number B 03 08 28002 018
Company: Nidec America Corporation
318 Industrial Lane, Torrington Industrial Park
Torrington, CT 06790 USA

TÜV SÜD America

Tested according to: IEC 60950-1 Edition 1.0 (2001)

D09A	D09A-12aU	0.22 A	12 V DC
VA350DC	35497	1.1 A	12 V DC
TA350DC	35390	0.39 A	12 V DC
TA350DC	35551	0.40 A	12 V DC
TA350DC	35556	1.0 A	12 V DC
TA350DC	34902	0.10A	12 V DC
D09A	D09A-12aS1	0.11 A	12 V DC
VA350DC	35610	0.29 A	50 V DC, 48-56 V DC
VA350DC	35453	0.55 A	12 V DC
TA350DC	35647	0.13 A	24 V DC
TA350DC	35561	0.68 A	12 V DC
92x32mm	H92C12BGA7	0.88 A	12 V DC
92 x 25 mm	a92T12MGA7	0.18A	12 V DC
92 x38 mm	a92E12BUA7	2.3 A	12 V DC or 10.2 – 13.8 V DC
92x32 mm	H92C12BUA7	1.65 A	12 V DC or 12-13.8 V DC
TA350DC	34908	0.15A	24 V DC
92 x 38 mm	a92E12BS3A7	4.0 A	12 V DC or 11.4-12.6 V DC
92 x 38 mm	V92E12BGA7	2.24 A	12 V DC or 7.0-12 V DC
92 x 38 mm	V92E12BUA7	3.24 A	12 V DC or 7.0-13.8 V DC
92 x 25 mm	a92T12MUA7	0.25 A	12 V DC
92 x 38 mm	V92E12BMA7	0.62 A	12 V DC
92 x 25 mm	a92T12MHA7	0.14 A	12 V DC
92 x 25 mm	a92T24MUA7	0.14 A	24 V DC
92 X 25 mm	a92T12MMA7	0.10 A	12 V DC
92 X 25 mm	a92T12MUB7	0.25 A	12 V DC
92 x 38 mm	a92E12BHA7	1.32 A	12 V DC

DC Fans 30 mm or 120 or.../rev32
December 14, 2007

License ID 8-01

Attachment 1 to Bauart Certificate Number B 03 08 28002 018
Company: Nidec America Corporation
318 Industrial Lane, Torrington Industrial Park
Torrington, CT 06790 USA

Tested according to: IEC 60950-1 Edition 1.0 (2001)

Model Number Nomenclature (USA).

Prefixes - Venturi Style is denoted by alpha letters A through Z.

Suffixes - 00 through - 200 and/or alpha letters and/or numeric suffixes with following options.

1.	Quick disconnects terminals	9.	Electrical Tubing
2.	Flying leads	10.	Alarm Output
3.	Flying leads with terminals	11.	High Fail/Low Pass Alarm
4.	Flying leads with connector	12.	Hall Cell or Signal Output
5.	Tachometer signal output	13.	Thermal Speed Fan
6.	RPM Select	14.	Plastic Mounting Bracket, rated V-0.
7.	Ground Lead	15.	Plastic Mounting Bracket with finger guard, rated V-0
8.	Ground Screw	16.	Customer Code

Suffix C, C1-C99 Variable speed thermal fan with remotely located thermistor attached with leads to PCB same as suffix G below except for remote location.

Suffix G, G1-G99 Variable speed thermal fan with integral thermistor mounted on PCB that allows for various ambient temperatures between 20°C and 80°C when the fan delivers maximum CFM at rated input current.

Suffix F European Union's RoHS directive compliant fan.

DC Fans 30 mm or 120 or.../rev32
December 14, 2007

License ID 8-01

Attachment 1 to Bauart Certificate Number B 03 08 28002 018
Company: Nidec America Corporation
318 Industrial Lane, Torrington Industrial Park
Torrington, CT 06790 USA

Tested according to: IEC 60950-1 Edition 1.0 (2001)

Alternate Model Number Nomenclature (Japan).

Model D04G – 12aS1bbccc

a - Housing mounting hole type, P, T, B , J, with optional numbers.
Special Design Housing, S with optional number.

bb, ccc - Nomenclature of optional alpha letters and numeric numbers as listed above not affecting the certification.

S2, S3, S1, S8, S9, S1, M, H, G, S15, L, S5, U, S18, S7, S5 - Rotating speed with specific label current.

Suffix F European Union's RoHs directive compliant fan.

Model a80E12bS1cd-ef

a:	H – Hybrid – Open Flange. T – Tube Axial – Open Flange. U – Tube Axial – Closed Flange. V – Vane Axial, Open Flange. W – Vane Axial, Closed Flange.	R: DICR – Open Flange S: DICR – Closed Flange
40: 60: 70:	40 mm Housing Size. 60 mm Housing Size. 70 mm Housing Size.	80: 80 mm Housing Size. 92: 92 mm Housing Size.
X: R: T: S: C:	10 mm thickness. 15 mm thickness. 25 mm thickness. 28 mm thickness. 32 mm thickness.	E: 38 mm thickness. W: 56 mm thickness.
12:	12 V DC, 05-5 V DC	
b:	B – 2 Ball Bearings. M – Sleeve Bearings.	

L, M, H, U, S2, G, S1, S3, S4, S5, S7: Rotating Speed with specific label current.

c:	A, B – Motor Design, Single and Two Phase. Z – Old Motor
d: B C	5 or 7 or 9– Impeller Blade Count. 11 Impeller Blade Count. 12 Impeller Blade Count.

License ID 8-01

Attachment 1 to Bauart Certificate Number B 03 08 28002 018
Company: Nidec America Corporation
318 Industrial Lane, Torrington Industrial Park
Torrington, CT 06790 USA

Tested according to: IEC 60950-1 Edition 1.0 (2001)

SUFFIXES

e: 01, 51 – Standard
02, 52 – Tach.
03, 53 – Locked Rotor
05, 55 – Tach and Locked Rotor
07, 57 – PWM & Tach.

f: A01 through A50 – Optional Customer Code.
J01 through J100 – Optional Customer Code
T01 through T50 – Optional Customer Code.

Suffix F – European Union's RoHS Directive Compliant Fan.

License Condition:
Personal Protection against mechanical hazards are a part of the end systems requirement

DC Fans 30 mm or 120 or.../rev32
December 14, 2007

License ID 8-01

Component License for Tyco PTC's

License ID 8-01

Zertifikat *Certificate*

TÜV

Zertifikat Nr. *Certificate No.* R 72041438

Blatt *Page* 0001

Ihr Zeichen *Client Reference*	Unser Zeichen *Our Reference*	Ausstellungsdatum	*Date of Issue (day/mo/yr)*
Al Martin	-HH- 09872077 033	29.07.2004	

Genehmigungsinhaber *License Holder*
Tyco Electronics, Raychem
Circuit Protection Division
308 Constitution Drive
Menlo Park CA 94611-1135
USA

Fertigungsstätte *Manufacturing Plant*
Raychem Corporation
300 Constitution Drive
Menlo Park CA 94025
USA

Prüfzeichen *Test Mark*
TÜV Rheinland Product Safety | BAUART GEPRÜFT / TYPE APPROVED

Geprüft nach *Tested acc. to*
EN 60730-1:1995+A11+A12+A1
EN 60730-1/A2+A13+A14+A15:1998

Zertifiziertes Produkt (Geräteidentifikation) *Certified Product (Product Identification)*

Lizenzentgelte - Einheit *License Fee - Unit*

Kaltleiter Positive Temperature Coefficient Resistor

Model Designation:	Rated Voltage DC:	Rated Current:	Rated Power:	S
miniSMD020xxxxxxxxxxxxxxxxxxxx	30V	0,20A	1,0W	
miniSMDC035xxxxxxxxxxxxxxxxxxxx	6V	0,35A	0,8W	
miniSMD050xxxxxxxxxxxxxxxxxxxx	15V	0,50A	0,8W	
miniSMDC050xxxxxxxxxxxxxxxxxxxx	15V	0,50A	0,8W	
miniSMD075xxxxxxxxxxxxxxxxxxxx	13,2V	0,75A	0,8W	
miniSMDC075xxxxxxxxxxxxxxxxxxxx	13,2V	0,75A	1,0W	
miniSMDC100xxxxxxxxxxxxxxxxxxxx	6V	1,10A	1,2W	
miniSMDC110xxxxxxxxxxxxxxxxxxxx	6V	1,10A	1,2W	
PSR24063xxxxxxxxxxxxxxxxxxxx	13,2V	0,75A	1,0W	
miniSMDC125xxxxxxxxxxxxxxxxxxxx	6V	1,25A	0,9W	
miniSMDC150xxxxxxxxxxxxxxxxxxxx	6V	1,5A	0,9W	
miniSMDC014xxxxxxxxxxxxxxxxxxxx	60V	0,14A	0,75W	
miniSMDE190xxxxxxxxxxxxxxxxxxxx	16V	1,90A	1,5W	
miniSMDC200xxxxxxxxxxxxxxxxxxxx	8V	2,00A	1,0W	
miniSMDM110xxxxxxxxxxxxxxxxxxxx	8V	1,10A	0,6W	

contd./page 2

5

ANLAGE (Appendix): 1

Dem Zertifikat liegt unsere Prüf- und Zertifizierungsordnung zugrunde. Das Produkt entspricht den o.g. Anforderungen, die Herstellung wird überwacht. This certificate is based on our Testing and Certification Regulation. The product fulfills above mentioned requirements, the production is subject to surveillance.

Zertifizierungsstelle

TÜV Rheinland Product Safety GmbH, Am Grauen Stein, D-51105 Köln
Tel.: (+49/221)8 06 - 13 71 e-mail: cert-validity@de.tuv.com
Fax: (+49/221)8 06 - 39 35 http://www.tuv.com/safety

Dipl.-Ing. M. Raap

License ID 8-01

Zertifikat *Certificate*

TÜV

Zertifikat Nr. *Certificate No.* R 72041438

Blatt *Page* 0002

Ihr Zeichen *Client Reference*	Unser Zeichen *Our Reference*	Ausstellungsdatum	*Date of Issue (day/mo/yr)*
Al Martin	-HH- 09872077 033	29.07.2004	

Genehmigungsinhaber *License Holder*
Tyco Electronics, Raychem
Circuit Protection Division
308 Constitution Drive
Menlo Park CA 94611-1135
USA

Fertigungsstätte *Manufacturing Plant*
K.K. Tyco Electronics Raychem
Tsukuba Site
2414 Amada, Sakuragawa-mura
Inashiki-gun, Ibaraki 300-0--626
Japan

Prüfzeichen *Test Mark*
TÜV Rheinland Product Safety | BAUART GEPRÜFT / TYPE APPROVED

Geprüft nach *Tested acc. to*
EN 60730-1:1995+A11+A12+A1
EN 60730-1/A2+A13+A14+A15:1998

Zertifiziertes Produkt (Geräteidentifikation) *Certified Product (Product Identification)*

Lizenzentgelte - Einheit *License Fee - Unit*

Kaltleiter Positive Temperature Coefficient Resistor

Model Designation:	Rated Voltage DC:	Rated Current:	Rated Power:
miniSMDM110xxxxxxxxxxxxxxxxxxxx	8V	1,60A	0,8W
PSR24432xxxxxxxxxxxxxxxxxxxx	6V	1,10A	1,2W
miniSMDM110/16xxxxxxxxxxxxxxxxxxxx	16V	1,10A	0,8W
miniSMDM075xxxxxxxxxxxxxxxxxxxx	13,2V	0,75A	0,6W
microSMD050xxxxxxxxxxxxxxxxxxxx	13,2V	0,50A	0,8W
microSMD075xxxxxxxxxxxxxxxxxxxx	6V	0,75A	0,8W
microSMD110xxxxxxxxxxxxxxxxxxxx	6V	1,10A	0,8A
miniSMDM200xxxxxxxxxxxxxxxxxxxx	8V	2,00A	0,8W
miniSMDC260xxxxxxxxxxxxxxxxxxxx	6V	2,60A	1,0W
microSMD035xxxxxxxxxxxxxxxxxxxx	6V	0,35A	0,8W
miniSMDM075/24xxxxxxxxxxxxxxxxxxxx	24V	0,75A	0,8W
microSMD005xxxxxxxxxxxxxxxxxxxx	30V	0,05A	1,0W

Additional Manufacturing Plant: see above (K727106)
contd./page 3

Dem Zertifikat liegt unsere Prüf- und Zertifizierungsordnung zugrunde
Das Produkt entspricht den o.g. Anforderungen, die Herstellung wird überwacht.
This certificate is based on our Testing and Certification Regulation. The product fulfills above mentioned requirements, the production is subject to surveillance.

Zertifizierungsstelle

Dipl.-Ing. M. Raap

TÜV Rheinland Product Safety GmbH, Am Grauen Stein, D-51105 Köln
Tel.: (+49/221)8 06 - 13 71 e-mail: cert-validity@de.tuv.com
Fax: (+49/221)8 06 - 39 35 http://www.tuv.com/safety

License ID 8-01

Zertifikat *Certificate*

TÜV

Zertifikat Nr. *Certificate No.* R 72041438

Blatt *Page* 0003

Ihr Zeichen *Client Reference*	Unser Zeichen *Our Reference*	Ausstellungsdatum	*Date of Issue (day/mo/yr)*
Al Martin	-HH- 09872077 033	29.07.2004	

Genehmigungsinhaber *License Holder*
Tyco Electronics, Raychem
Circuit Protection Division
308 Constitution Drive
Menlo Park CA 94611-1135
USA

Fertigungsstätte *Manufacturing Plant*
K.K. Tyco Electronics Raychem
Tsukuba Site
2414 Amada, Sakuragawa-mura
Inashiki-gun, Ibaraki 300-0--626
Japan

Prüfzeichen *Test Mark*
TÜV Rheinland Product Safety | BAUART GEPRÜFT | TYPE APPROVED

Geprüft nach *Tested acc. to*
EN 60730-1:1995+A11+A12+A1
EN 60730-1/A2+A13+A14+A15:1998

Zertifiziertes Produkt (Geräteidentifikation) *Certified Product* *(Product Identification)*

Lizenzentgelte - Einheit *License Fee - Unit*

Kaltleiter Positive Temperature Coefficient Resistor

Model Designation:	Rated Voltage DC:	Rated Current:	Rated Power:
miniSMDM150/33xxxxxxxxxxxxxxxxxxxx	33V	1,50A	0,8W
miniSMDM260xxxxxxxxxxxxxxxxxxxx	6V	2,60A	0,8W
microSMD010xxxxxxxxxxxxxxxxxxxx	24V	0,10A	1,0W
miniSMDC020xxxxxxxxxxxxxxxxxxxx	30V	0,20A	0,8W
microSMD150xxxxxxxxxxxxxxxxxxxx	6V	1,50A	0,8W
PSR-24669xxxxxxxxxxxxxxxxxxxx	6V	1,60A	0,8W
miniSMDC050xxxxxxxxxxxxxxxxxxxx	24V	0,50A	0,8W
miniSMDM150/24xxxxxxxxxxxxxxxxxxxx	24V	1,50A	0,8W
miniSMDM160xxxxxxxxxxxxxxxxxxxx	8V	1,60A	0,8W
ERY32CA035	6V	0,35A	0,8W
ERY43CC050	15V	0,50A	0,8W
ERY43CB075	13,2V	0,75A	1,0W
ERY43CA110	6V	1,10A	1,2W

contd./page 4

Dem Zertifikat liegt unsere Prüf- und Zertifizierungsordnung zugrunde.
Das Produkt entspricht den o.g. Anforderungen, die Herstellung wird überwacht.
This certificate is based on our Testing and Certification Regulation. The product fulfills above mentioned requirements, the production is subject to surveillance.

Zertifizierungsstelle

TÜV Rheinland Product Safety GmbH, Am Grauen Stein, D-51105 Köln
Tel.: (+49/221)8 06 - 13 71 e-mail: cert-validity@de.tuv.com
Fax: (+49/221)8 06 - 39 35 http://www.tuv.com/safety

Dipl.-Ing. M. Raap

License ID 8-01

Zertifikat *Certificate*

TÜV

Zertifikat Nr. *Certificate No.* R 72041438

Blatt *Page* 0004

Ihr Zeichen *Client Reference*	Unser Zeichen *Our Reference*	Ausstellungsdatum	*Date of Issue (day/mo/yr)*
Al Martin	-HH- 09872077 033	29.07.2004	

Genehmigungsinhaber *License Holder*
Tyco Electronics, Raychem
Circuit Protection Division
308 Constitution Drive
Menlo Park CA 94611-1135
USA

Fertigungsstätte *Manufacturing Plant*
K.K. Tyco Electronics Raychem
Tsukuba Site
2414 Amada, Sakuragawa-mura
Inashiki-gun, Ibaraki 300-0626
Japan

Prüfzeichen *Test Mark*
TÜV Rheinland Product Safety | BAUART GEPRÜFT | TYPE APPROVED

Geprüft nach *Tested acc. to*
EN 60730-1:1995+A11+A12+A1
EN 60730-1/A2+A13+A14+A15:1998

Zertifiziertes Produkt (Geräteidentifikation) *Certified Product* (*Product Identification*)

Lizenzentgelte - Einheit *License Fee - Unit*

Kaltleiter Positive Temperature Coefficient Resistor

Model Designation:	Rated Voltage DC:	Rated Current:	Rated Power:
miniSMDC160xxxxxxxxxxxxxxxxxxxx	9V	1,60A	0,8W
miniSMDC110/16xxxxxxxxxxxxxxxxxxxx	16V	1,10A	1,2W
miniSMDC150/12xxxxxxxxxxxxxxxxxxxx	12V	1,50A	0,8W
miniSMDC110xxxxxxxxxxxxxxxxxxxx	8V	1,10A	1,2W
microSMD010xxxxxxxxxxxxxxxxxxxx	30V	0,10A	0,8W
miniSMDC260/12xxxxxxxxxxxxxxxxx	12V	2,60A	1,0W
miniSMDC125/16xxxxxxxxxxxxxxxxxxxx	16V	1,25A	0,8W

(x=0-9, A-Z, ".", "-", blank)

Special Remarks: Optional suffix x denotes different lead configuration, lead length, lead plating, shipping/packing method, resistance matching, and/or lead-free solder. Tested to clauses 12, 15, 16, 17, J15, J17 for Type 2 controls (PTC thermistor type). Replaces certificate R72040755.

Dem Zertifikat liegt unsere Prüf- und Zertifizierungsordnung zugrunde. Das Produkt entspricht den o.g. Anforderungen, die Herstellung wird überwacht. This certificate is based on our Testing and Certification Regulation. The product fulfills above mentioned requirements, the production is subject to surveillance.

Zertifizierungsstelle

TÜV Rheinland Product Safety GmbH, Am Grauen Stein, D-51105 Köln
Tel.: (+49/221)8 06 - 13 71 e-mail: cert-validity@de.tuv.com
Fax (+49/221)8 06 - 39 35 http://www.tuv.com/safety

Dipl.-Ing. M. Raap

License ID 8-01

Zertifikat ***Certificate***

TÜV

Zertifikat Nr. *Certificate No.* R 72041438

Blatt *Page* 0008

Ihr Zeichen *Client Reference*	**Unser Zeichen** *OurReference*	**Ausstellungsdatum**	*Date of Issue (day/mo/yr)*
Al Martin	-HH- 09872077 037	09.06.2006	

Genehmigungsinhaber *License Holder*
Tyco Electronics, Raychem
Circuit Protection Division
308 Constitution Drive
Menlo Park CA 94025
USA

Fertigungsstätte *Manufacturing Plant*
K.K. Tyco Electronics Raychem
Tsukuba Site
2414 Amada, Sakuragawa-mura
Inashiki-gun, Ibaraki 300-0--626
Japan

Prüfzeichen *Test Mark*
TÜV Rheinland Product Safety | BAUART GEPRÜFT | TYPE APPROVED

Geprüft nach *Tested acc. to*
EN 60730-1:1995+A11+A12+A1
EN 60730-1/A2+A13+A14+A15

Zertifiziertes Produkt (Geräteidentifikation) *Certified Product* *(Product Identification)*

Lizenzentgelte - Einheit *License Fee - Unit*

Kaltleiter Positive Temperature Coefficient Resistor

Change for:
Model Designation: miniSMDC100xxxxxxxxxxxxxxxxxxxx
Rated Voltage: DC 8V (was 6V)

Dem Zertifikat liegt unsere Prüf- und Zertifizierungsordnung zugrunde.
Das Produkt entspricht den o.g. Anforderungen, die Herstellung wird überwacht.
This certificate is based on our Testing and Certification Regulation. The product fulfills above mentioned requirements, the production is subject to surveillance.

Zertifizierungsstelle

Dipl.-Ing. M. Raap

TÜV Rheinland Product Safety GmbH, Am Grauen Stein, D-51105 Köln
Tel.: (+49/221)8 06 - 13 71 e-mail: cert-validity@de.tuv.com
Fax: (+49/221)8 06 - 39 35 http://www.tuv.com/safety

License ID 8-01

Component License for Bourns PTC's

License ID 8-01

TÜVRheinland®
Precisely Right.

Certificate No. 02057213

Certificate Type: TUV Mark

Certificate Holder: **Bourns Inc.**
1200 Columbia Avenue
Riverside, CA

Certificate Number: R 02057213

Certified Product: Product type:
PTC Resettable Overcurrent Protectors (Kaltleiter)

Model designation:
MF- MSMF150 / 12- J5

Fulfilled Standards: EN 60730-1:2000+A1+A12+A13+A14

The standard(s) listed here reflect the status at the time of the release of this certificate.

For more standards and/or upgrades please refer to the latest pages of the same certific no.

Date of Issue: 04 July 2007

! please note that:
This certificate consists of more than one page, because additional information has been added (e.g. additional product components).Please check above for details.

Navigate Certificate Page « 50 51

License ID 8-01

UL Certifications for Lithium Batteries

License ID 8-01

ONLINE CERTIFICATIONS DIRECTORY

BBCV2.MH13654
Lithium Batteries - Component

Page Bottom

Lithium Batteries - Component

See General Information for Lithium Batteries - Component

VARTA MICROBATTERY GMBH MH13654
DAIMLER-STR 1
73479 ELLWANGEN, GERMANY

Model	Primary Type	Max Abnormal Charging Current, mA (a)	Max Abnormal Charging Voltage, V dc	Replacement(c), (d)
CR1/4AA(*)	Lithium manganese dioxide cylindrical	4.0	—	Technician
CR1/2AA(*)	Lithium manganese dioxide cylindrical	4.0	—	Technician
CR2/3AA(*)	Lithium manganese dioxide cylindrical	4.0	—	Technician
CRAA(*)	Lithium manganese dioxide cylindrical	4.0	—	Technician
CR2/3 A	Lithium manganese dioxide cylindrical	4.0	—	Technician
CR2/3 AH(**)	Lithium manganese dioxide cylindrical	33.0	—	User
2XCR1/2AA	Lithium manganese dioxide battery pack	4.0	—	Technician
CR-1/3N	Lithium manganese dioxide cylindrical	2.0	—	User
CR 2/3AH	Lithium manganese dioxide cylindrical	25.0	—	User
6204	Lithium manganese dioxide cylindrical	10.0	—	User
6205	Lithium manganese dioxide cylindrical	10.0	—	User
CR1216	Lithium Manganese Dioxide Coin	3.0	—	User
CR1216 (a)(m)	lithium/manganese dioxide coin cells	3.50	—	User
CR1220	Lithium Manganese Dioxide Coin	3.0	—	User
CR1220(a)(m)	lithium/manganese dioxide coin cells	10.0	—	User
CR1616	Lithium Manganese Dioxide Coin	4.0	—	User
CR1616(a)(m)	lithium/manganese dioxide coin cells	2.50	—	User
CR1620	Lithium Manganese Dioxide Coin	2.50	—	User
CR1620(a)(m)	lithium/manganese dioxide coin cells	2.50	—	User
CR2016	Lithium Manganese Dioxide Coin	4.0	—	User
CR2025	Lithium Manganese Dioxide Coin	5.0	—	User
CR2032	Lithium Manganese Dioxide Coin	5.0	—	User

License ID 8-01

ONLINE CERTIFICATIONS DIRECTORY

BBCV2.MH12566
Lithium Batteries - Component

Page Bottom

Lithium Batteries - Component

See General Information for Lithium Batteries - Component

SONY ENERGY DEVICES CORP MH12566
1-1 AZA SHIMOSUGISHITA
TAKAKURA HIWADA-MACHI
KORIYAMA-SHI, FUKUSHIMA 963-0531 JAPAN

Model	Primary Type[a]	Max Abnormal Charging Current, mA	Max Abnormal Charging Voltage, V dc	Replacement[c], [d]
CR1216(k)	Lithium/manganese dioxide coin cells	3.5	—	User
CR1220(k)	Lithium/manganese dioxide coin cells	10.0	—	User
CR1616(k)	Lithium/manganese dioxide coin cells	4.0	—	User
CR1620(k)	Lithium/manganese dioxide coin cells	2.5	—	User
CR2016(k)	Lithium/manganese dioxide coin cells	10.0	—	User
CR2025(k)	Lithium/manganese dioxide coin cells	5.0	—	User
CR2025A (k)	Lithium/manganese dioxide coin cells	10.0	—	User
CR2450S (k)	Lithium/manganese dioxide coin cells	15.0	—	Technician
→ CR2032(k)	Lithium/manganese dioxide coin cells	10.0	—	User
CR2430(k)	Lithium/manganese dioxide coin cells	25.0	—	User
CR2450(k)	Lithium/manganese dioxide coin cells	100	—	Technician
CR2450B (k)	Lithium/manganese dioxide coin cells	100	—	User
CR2477(k)	Lithium/manganese dioxide coin cells	10.0	—	Technician
CR123A(d)	Lithium/manganese dioxide cells or batteries	25.0	—	User
CR17335	Lithium/manganese dioxide cells or batteries	15.0	—	Technician
CR17450	Lithium/manganese dioxide cells or batteries	15.0	—	Technician
CR2	Lithium/manganese dioxide cells or batteries	20.0	—	User
CR-P2	Lithium/manganese dioxide cells or batteries	25.0	—	User

License ID 8-01

ONLINE CERTIFICATIONS DIRECTORY

BBCV2.MH13421
Lithium Batteries - Component

Page Bottom

Lithium Batteries - Component

See General Information for Lithium Batteries - Component

FDK ENERGY CO LTD MH13421
614 WASHIZU
KOSAI-SHI, SHIZUOKA 431-0431 JAPAN

Model No.	Max Abnormal Charging Current mA (a)	User Replaceable
Lithium/manganese dioxide cylindrical cells.		
CR6.L	15.0	No
CR6LHT	20.0	No
CR8.L	5.0	No
CR8L	5.0	No
CR8.LHC	5.0	No
CR8.LHT	10.0	No
CR14.H	15.0	No
CR20.H	30.0	No
CR1/26.L	5.0	Yes(b)
CR1/28.L	5.0	Yes(b)
CR2/36.L	5.0	Yes(b)
CR2/38.L	8.0	Yes(b)
Lithium/manganese dioxide coin cells.		
$CR2016_T$	2.5	Yes
$CR2025_T$	5.0	Yes(b)
→ $CR2032_T$	5.0	Yes(b)
Primary lithium/manganese dioxide coin cells.		
CR1216v(a)(j)	3.5	Yes(b)
CR1220v(a)(j)	10.0	Yes(b)
CR1616v(a)(j)	2.5	Yes(b)
CR2016v(a)(j)	10.0	Yes(b)
CR2025v(a)(j)	5.0	Yes(b)
CR2032v(a)(j)	10.0	Yes(b)

License ID 8-01

ONLINE CERTIFICATIONS DIRECTORY

BBCV2.MH12568
Lithium Batteries - Component

Page Bottom

Lithium Batteries - Component

See General Information for Lithium Batteries - Component

HITACHI MAXELL LTD MH12568
ONO WORKS
5 TAKUMIDAI
ONO-SHI, HYOGO 675-1322 JAPAN

Model	Primary Type[a]	Max Abnormal Charging Current, mA	Max Charge Voltage, V	Replacement [c], [d]
ER3365	lithium/thionyl chloride disk shaped cells	25.00	12.00	Technician
ER3, ER3A, ER3AK, ER3H, ER3K, ER3M, ER3MA, ER3S, ER3SA,ER3SAK, ER3SAR, ER3SK, ER3SM, ER3SMA, ER3SMAR, ER3SMR, ER3SR	lithium/thionyl chloride cells and batteries	20.00	12.00	Technician
ER6, ER6A, ER6AK, ER6C,ER6CA, ER6CM, ER6CMA, ER6K, ER6M, ER6MA, ER6MK	lithium/thionyl chloride cells and batteries	20.00	12.00	Technician
ER10/28, ER10/28A, ER10/28M, ER10/28MA	lithium/thionyl chloride cells and batteries	20.00	12.00	Technician
ER17/33, ER17/33A, ER17/33C, ER17/33M, ER17/33MA	lithium/thionyl chloride cells and batteries	20.00	12.00	Technician
ER17/50, ER17/50M	lithium/thionyl chloride cells and batteries	20.00	12.00	Technician
ER17/50H	lithium/thionyl chloride cells and batteries	20.00	12.00	Technician
2ER6C	lithium/thionyl chloride multicell batteries	20.00	12.00	Technician
2ER6CA	lithium/thionyl chloride multicell batteries	20.00	12.00	Technician
ER6C-2	lithium/thionyl chloride multicell batteries	20.00	12.00	Technician
ER6CA-2	lithium/thionyl chloride multicell batteries	20.00	12.00	Technician
2ER6K	lithium/thionyl chloride multicell batteries	20.00	12.00	Technician
2ER6AK	lithium/thionyl chloride multicell batteries	20.00	12.00	Technician
ER6K-2	lithium/thionyl chloride multicell batteries	20.00	12.00	Technician

License ID 8-01

ER6AK-2	lithium/thionyl chloride multicell batteries	20.00	12.00	Technician
2ER3	lithium/thionyl chloride multicell batteries	20.00	12.00	Technician
2ER3A	lithium/thionyl chloride multicell batteries	20.00	12.00	Technician
2ER3K	lithium/thionyl chloride multicell batteries	20.00	12.00	Technician
2ER3AK	lithium/thionyl chloride multicell batteries	20.00	12.00	Technician
2ER3S	lithium/thionyl chloride multicell batteries	20.00	12.00	Technician
2ER3SA	lithium/thionyl chloride multicell batteries	20.00	12.00	Technician
2ER3SK	lithium/thionyl chloride multicell batteries	20.00	12.00	Technician
2ER3SAK	lithium/thionyl chloride multicell batteries	20.00	12.00	Technician
2ER17/33	lithium/thionyl chloride multicell batteries	20.00	12.00	Technician
2ER17/33A	lithium/thionyl chloride multicell batteries	20.00	12.00	Technician
ER17/33-2	lithium/thionyl chloride multicell batteries	20.00	12.00	Technician
ER17/33A-2	lithium/thionyl chloride multicell batteries	20.00	12.00	Technician
2ER17/33K	lithium/thionyl chloride multicell batteries	20.00	12.00	Technician
2ER17/33AK	lithium/thionyl chloride multicell batteries	20.00	12.00	Technician
ER17/33K-2	lithium/thionyl chloride multicell batteries	20.00	12.00	Technician
ER17/33AK-2	lithium/thionyl chloride multicell batteries	20.00	12.00	Technician
2ER10/28	lithium/thionyl chloride multicell batteries	20.00	12.00	Technician
2ER10/28A	lithium/thionyl chloride multicell batteries	20.00	12.00	Technician
2ER10/28-K	lithium/thionyl chloride multicell batteries	20.00	12.00	Technician
2ER10/28AK	lithium/thionyl chloride multicell batteries	20.00	12.00	Technician
ER18/50	lithium/thionyl chloride cell	20.00	12.00	Technician
ER18/50 T-2	lithium/thionyl chloride cellmulticell batteries	40.00	12.00	Technician
CR1025	lithium/manganese dioxide coin cells	2.50	12.00	User
CR1216	lithium/manganese dioxide coin cells	2.50	12.00	User

License ID 8-01

CR1220	lithium/manganese dioxide coin cells	3.00	12.00	User
CR1616	lithium/manganese dioxide coin cells	2.50	12.00	User
CR1620	lithium/manganese dioxide coin cells	4.00	12.00	User
CR1632	lithium/manganese dioxide coin cells	4.00	12.00	User
CR2012	lithium/manganese dioxide coin cells	2.50	12.00	User
CR2016	lithium/manganese dioxide coin cells	10.00	12.00	User
CR2025	lithium/manganese dioxide coin cells	10.00	12.00	User
CR2025A	lithium/manganese dioxide coin cells	5.00	12.00	User
→ CR2032	lithium/manganese dioxide coin cells	10.00	12.00	User
CR2032A	lithium/manganese dioxide coin cells	10.00	12.00	User
CR2032B	lithium/manganese dioxide coin cells	10.00	12.00	User
CR2032H	lithium/manganese dioxide coin cells	10.00	12.00	User
CR2032HA	lithium/manganese dioxide coin cells	10.00	12.00	User
CR2040	lithium/manganese dioxide coin cells	10.00	12.00	Technician
CR2430	lithium/manganese dioxide coin cells	15.00	12.00	User
CR2450(j)	lithium/manganese dioxide coin cells	15.00	12.00	Technician
CR1620(j)	lithium/manganese dioxide coin cells	2.50	12.00	User
CR2430	lithium/manganese dioxide coin cells	15.00	—	User
CR2450	lithium/manganese dioxide coin cells	15.00	12.00	User
CR17450	lithium/manganese dioxide cylindrical cells	20.0	12.00	Technician
CR17450-2	lithium/manganese dioxide cylindrical cells	20.0	12.00	Technician
CR17335	lithium/manganese dioxide cylindrical cells	20.0	12.00	Technician

Model	Secondary Type[b]	Max Charging Current (Ic), mA	Max Charging Voltage, V dc (e)	Test Compliance (f)
PLC363562	Polymer Lithium-Ion cells	120	12.00	1
PLC363562H	Polymer Lithium-Ion cells	120	4.60	1

License ID 8-01

ONLINE CERTIFICATIONS DIRECTORY

BBCV2.MH12210
Lithium Batteries - Component

Page Bottom

Lithium Batteries - Component

See General Information for Lithium Batteries - Component

PANASONIC CORPORATION, PANASONIC CORPORATION OF NORTH AMERICA
1 PANASONIC WAY
SECAUCUS, NJ 07094 USA

MH12210

Model	Primary Type[a]	Max Abnormal Charging Current, mA	Max Abnormal Charge Voltage, V dc	Replacement (c), (d)
BR-1/2A(I)	Lithium/polycarbon monofluoride cylindrical cells	5.0	—	User
BR-2/3AA(I)	Lithium/polycarbon monofluoride cylindrical cells	5.0	—	User
BR-2/3A(I)	Lithium/polycarbon monofluoride cylindrical cells	10.0	—	User
BR-A(I)	Lithium/polycarbon monofluoride cylindrical cells	15.0	—	Technician
BR-AG(I)	Lithium/polycarbon monofluoride cylindrical cells	15.0	—	Technician
BR-2/3AG(I)	Lithium/polycarbon monofluoride cylindrical cells	10.0	—	User
BR-AH(I)	Lithium/polycarbon monofluoride cylindrical cells	15.0	—	Technician
BR-2/3AH(I)	Lithium/polycarbon monofluoride cylindrical cells	10.0	—	User
BR-C(I)	Lithium/polycarbon monofluoride cylindrical cells	20.0	—	Technician
BR-1/2AA(I)	Lithium/polycarbon monofluoride cylindrical cells	5.0	—	User
BR-1/2AAK(I)	Lithium/polycarbon monofluoride cylindrical cells	5.0	—	User
BR-AA(I)	Lithium/polycarbon	15.0	—	User

License ID 8-01

	monofluoride cylindrical cells			
BR-AAK(I)	Lithium/polycarbon monofluoride cylindrical cells	15.0	—	User
BR425(I), BR-425(I)	Lithium/polycarbon monoflouride coin cells and pin type cells	0.10	—	User
BR435(I), BR-435(I)	Lithium/polycarbon monoflouride coin cells and pin type cells	0.20	—	User
BR1216(I), BR-1216(I)	Lithium/polycarbon monoflouride coin cells and pin type cells	3.0	—	User
BR1220(I), BR-1220(I)	Lithium/polycarbon monoflouride coin cells and pin type cells	3.0	—	User
BR1225(I), BR-1225(I)	Lithium/polycarbon monoflouride coin cells and pin type cells	3.0	—	User
BR1225A(I), BR-1225A(I)	Lithium/polycarbon monoflouride coin cells and pin type cells	3.0	—	User
BR1616(I), BR-1616(I)	Lithium/polycarbon monoflouride coin cells and pin type cells	4.0	—	User
BR1632(I), BR-1632(I)	Lithium/polycarbon monoflouride coin cells and pin type cells	4.0	—	User
BR1632A(I), BR-1632A(I)	Lithium/polycarbon monoflouride coin cells and pin type cells	4.0	—	User
BR2016(I), BR-2016(I)	Lithium/polycarbon monoflouride coin cells and pin type cells	4.0	—	User
BR2020(I), BR-2020(I), BR2020/SH3(I), BR2020/S3HE(I)	Lithium/polycarbon monoflouride coin cells and pin type cells	5.0	—	User
BR2032(I), BR-2032(I)	Lithium/polycarbon monoflouride coin cells and pin type cells	5.0	—	User
BR2320(I), BR-2320(I)	Lithium/polycarbon monoflouride coin cells and pin type cells	5.0	—	User
BR2325(I), BR-2325(I)	Lithium/polycarbon monoflouride coin cells and pin type cells	5.0	—	User
BR2330(I), BR-2330(I)	Lithium/polycarbon monoflouride coin cells and pin type cells	5.0	—	User
BR2330A(I), BR-2330A(I)	Lithium/polycarbon monoflouride coin cells and pin type cells	5.0	—	Technician
BR2450A(I), BR-2450A(I)	Lithium/polycarbon monoflouride coin cells and pin type cells	5.0	—	Technician

License ID 8-01

BR2412(I), BR-2412(I)	Lithium/polycarbon monoflouride coin cells and pin type cells	5.0	—	User
BR2477A(I), BR-2477A(I)	Lithium/polycarbon monoflouride coin cells and pin type cells	5.0	—	Technician
BR2777A(I), BR-2777A(I)	Lithium/polycarbon monoflouride coin cells and pin type cells	5.0	—	Technician
BR3032(I), BR-3032(I)	Lithium/polycarbon monoflouride coin cells and pin type cells	5.0	—	User
CR1025(I), CR-1025(I)	Lithium/manganese dioxide coin cells	2.0	—	User
CR1212(I), CR-1212(I)	Lithium/manganese dioxide coin cells	2.0	—	User
CR1216(I), CR-1216(I)	Lithium/manganese dioxide coin cells	3.0	—	User
CR1220(I), CR-1220(I)	Lithium/manganese dioxide coin cells	3.0	—	User
CR1612(I), CR-1612(I)	Lithium/manganese dioxide coin cells	3.0	—	User
CR1616(I), CR-1616(I)	Lithium/manganese dioxide coin cells	4.0	—	User
CR1620(I), CR-1620(I)	Lithium/manganese dioxide coin cells	4.0	—	User
CR1632(I), CR-1632(I)	Lithium/manganese dioxide coin cells	4.0	—	User
CR2004(I), CR-2004(I)	Lithium/manganese dioxide coin cells	4.0	—	User
CR2005(I), CR-2005(I)	Lithium/manganese dioxide coin cells	4.0	—	User
CR2012(I), CR-2012(I), CR-2012/S8A(I), CR-2012/S8AE(I), CR-2012/S8B(I)	Lithium/manganese dioxide coin cells	10.0	—	User
CR2016(I), CR-2016(I)	Lithium/manganese dioxide coin cells	10.0	—	User
CR2025(I), CR-2025(I), CR-2025/S7A(I), CR-2025/S7AE(I), CR-2025/S7B(I), CR-2025/S7BE(I)	Lithium/manganese dioxide coin cells	10.0	—	User
CR2032(I), CR-2032(I), CR-2032/S7A(I), CR-2032/S7AE(I), CR-2032/S5L(I), CR-2032/S5LE(I), CR-2032/S7F(I), CR-2032/S7K(I)	Lithium/manganese dioxide coin cells	10.0	—	User
CR2320(I), CR-2320(I)	Lithium/manganese dioxide coin cells	5.0	—	Technician
CR2330(I), CR-2330(I), CR-2330/S7B(I), CR-2330/S7BE(I), CR-2330/S7C(I), CR-2330/S7CE(I)	Lithium/manganese dioxide coin cells	10.0	—	User
CR2354(I), CR-2354(I)	Lithium/manganese dioxide coin cells	10.0	—	User

License ID 8-01

ONLINE CERTIFICATIONS DIRECTORY

BBCV2.MH15370
Lithium Batteries - Component

Page Bottom

Lithium Batteries - Component

See General Information for Lithium Batteries - Component

MITSUBISHI ELECTRIC CORP
2-7-3 MARUNOUCHI
CHIYODA-KU
TOKYO, 100-8310 JAPAN

MH15370

Model No.	Max Abnormal Charging Current mA (a)	User Replaceable
Lithium/thionyl chloride cells.		
ER3	20	No
ER17330V	30	No(c)
Primary lithium/manganese dioxide coin cells.		
CR614	10	Yes (b)
CR1025	10	Yes (b)
CR1220(a)(j)	10.0	Yes (b)
CR1616 (a)(j)	2.5	Yes (b)
CR2012	10	Yes (b)
CR2016 (a)(j)	10.0	Yes (b)
CR2025 (a)(j)	10.0	Yes (b)
→ CR2032 (a)(j)	10.0	Yes (b)
CR2325	10	No
CR2450 (a)(j)	20.0	User
CR2477 (a)(j)	10.0	Technician
Lithium/manganese dioxide cells or batteries.		
CR17335SE-R	15.0	Yes(b)
Lithium/manganese dioxide cylindrical cells.		
CR17335	8.0	Yes(b)

Model	Primary Type[a]	Max Abnormal Charging Current, mA	Max Abnormal Charging Voltage, V dc	Replacement[f]
CR2430	Lithium/manganese dioxide coin cells	10.0	—	User

(a) These cells and batteries are not rechargeable. The circuit containing the cells or batteries must contain a protective component

License ID 8-01

UL Certification for Seagate Hard Disk Drive

License ID 8-01

ONLINE CERTIFICATIONS DIRECTORY

NWGQ2.E145123
Information Technology Equipment Including Electrical Business Equipment - Component

Page Bottom

Information Technology Equipment Including Electrical Business Equipment - Component

See General Information for Information Technology Equipment Including Electrical Business Equipment - Component

SEAGATE TECHNOLOGY L L C E145123
1280 DISC DR
SHAKOPEE, MN 55379 USA

Barracuda 180 drives, Model(s) 9R9006-XXX*, 9R9007-XXX*, 9R9008-XXX*, 9R9009-XXX*

Barracuda 1LP drives, Model(s) 9B3001-XXX*, 9B3002-XXX*, 9B3003-XXX*, 9B3004-XXX*, 9B3005-XXX*

Barracuda 2LP drives, Model(s) 9B0001-XXX*, 9B0002-XXX*, 9B0003-XXX*, 9B0004-XXX*, 9B0006-XXX*, 9B0007-XXX*

Barracuda 36 ES2 drives, Model(s) 9V7002-XXX*, 9V7004-XXX*, 9W8005-XXX*, 9W800Y-XXX*

Barracuda 50 drives, Model(s) 9M2004-XXX*, 9M2005-XXX*, 9M2006-XXX*

Barracuda 9 drives, Model(s) 9B8001-XXX*, 9B8003-XXX*, 9B8004-XXX*, 9E0001-XXX*, 9E0003-XXX*, 9E0004-XXX*, 9E0005-XXX*, 9E0006-XXX*, 9E0007-XXX*

Barracuda I drives, Model(s) 998001-XXX*, 998002-XXX*, 998005-XXX*, 998006-XXX*, 998008-XXX*, 998009-XXX*

Barracuda II drives, Model(s) 997001-XXX*, 997002-XXX*, 997003-XXX*, 997004-XXX*, 997007-XXX*, 997008-XXX*

Barracuda IV drives, Model(s) 9A8001-XXX*, 9A8002-XXX*, 9A8003-XXX*, 9A8004-XXX*, 9A8005-XXX*, 9A8006-XXX*, 9A8007-XXX*

Cheetah 10K.7, Model(s) 9BB004-xxx, 9BB005-xxx, 9BB006-xxx, 9X1004-xxx+, 9X1005-xxx+, 9X1006-xxx+, 9X1007-xxx+, 9X1009-xxx+, 9X2004-xxx+, 9X2005-xxx+, 9X2006-xxx+, 9X2007-xxx+, 9X2009-xxx+, 9X3004-xxx+, 9X3005-xxx+, 9X3006-xxx+, 9X3007-xxx+, 9X3009-xxx+

Cheetah 146LP, Model(s) 9V2004-xxx*, 9V2005-xxx*, 9V2006-xxx*, 9V2007-xxx*, 9V2009-xxx*, 9V3004-xxx*, 9V3005-xxx*, 9V3006-xxx*, 9V3007-xxx*, 9V3009-xxx*, 9V4004-xxx*, 9V4005-xxx*, 9V4006-xxx*, 9X7005-xxx*, 9X7006-xxx*

Cheetah 15K drives, Model(s) 9X4004-xxx, 9X4005-xxx, 9X4006-xxx, 9X4007-xxx, 9X5004-xxx, 9X5005-xxx, 9X5006-xxx, 9X5007-xxx, 9X6004-xxx, 9X6005-xxx, 9X6006-xxx

Cheetah 15K.4 drives, Model(s) 9AK004-xxx, 9AK007-xxx, 9AL004-xxx, 9AL007-xxx, 9AM004-xxx, 9X4066-xxx, 9X5066-xxx, 9X6066-xxx

Cheetah 15K.5 drives, Model(s) 9DJ066-XXX, 9DK066-XXX, 9DL066-XXX, 9Z1004-XXX, 9Z1005-XXX, 9Z1006-XXX, 9Z1007-XXX, 9Z1066-XXX, 9Z2004-XXX, 9Z2005-XXX, 9Z2006-XXX, 9Z2007-XXX, 9Z2066-XXX, 9Z3004-XXX, 9Z3005-XXX, 9Z3006-XXX, 9Z3007-XXX, 9Z3066-XXX

Cheetah 15K.6 drives, Model(s) 9CE004-XXX, 9CE007-XXX, 9CE066-XXX, 9CG004-XXX, 9CG066-XXX, 9CH004-XXX, 9CH007-XXX, 9CH066-XXX, 9CK004-XXX, 9CK066-XXX, 9CL004-XXX, 9CL007-XXX, 9CL066-XXX, 9CN004-XXX, 9CN066-XXX, 9FL004-XXX*, 9FL066-XXX*, 9FM004-XXX*, 9FM066-XXX*, 9FN004-XXX*, 9FN066-XXX*

License ID 8-01

Cheetah drives, Model(s) 9E1001-XXX*, 9E1003-XXX*, 9E1004-XXX*, 9E1005-XXX*, 9E1006-XXX*, 9E1007-XXX*, 9E2001-XXX*, 9E2003-XXX*, 9E2004-XXX*, 9E2005-XXX*, 9E2006-XXX*, 9E2007-XXX*, 9J8004-XXX*, 9J8005-XXX*, 9J8006-XXX*, 9J9004-XXX*, 9J9005-XXX*, 9J9006-XXX*, 9K8005-XXX*, 9K8006-XXX*, 9L7004XXX*, 9L7005-XXX*, 9L7006-XXX*, 9L7007-XXX*, 9L7008-XXX*, 9L7009-XXX*, 9L8002-XXX*, 9L8003-XXX*, 9L8004-XXX*, 9L8005-XXX*, 9L8006-XXX*, 9L8007-XXX*, 9L8008-XXX*, 9L8009-XXX*, 9L9002-XXX*, 9L9003-XXX*, 9L9005-XXX*, 9L9006-XXX*, 9L9007-XXX*, 9L9008-XXX*, 9L9009-XXX*, 9N7004-XXX*, 9N7005-XXX*, 9N7006-XXX*, 9N7007-XXX*, 9N7008-XXX*, 9N7009-XXX*, 9N8004-XXX*, 9N8005-XXX*, 9N8006-XXX*, 9N8007-XXX*, 9N8008-XXX*, 9N8009-XXX*, 9R6004-XXX*, 9R6005-XXX*, 9R6006-XXX*, 9R6007-XXX*, 9R6008-XXX*, 9R6009-XXX*, 9R7004-XXX*, 9R7007-XXX*, 9T5004-XXX*, 9T5005-XXX*, 9T5006-XXX*, 9T5007-XXX*, 9T5008-XXX*, 9T5009-XXX*, 9V8005-XXX*, 9V8006-XXX*

CheetahNS drives, Model(s) 9EA004-XXX, 9EA007-XXX, 9EA066-XXX, 9EB004-XXX, 9EB007-XXX*, 9EB066-XXX

CheetahNS.2 drives, Model(s) 9FP004-XXX, 9FR004-XXX, 9FR066-XXX, 9FS004-XXX, 9FS066-XXX

CheetahX15 18LP drives, Model(s) 9P2004-XXX*, 9P2005-XXX*, 9P2006-XXX*, 9P2007-XXX*, 9P2008-XXX*, 9P2009-XXX*

CheetahX15 18LP-9GB drives, Model(s) 9P9004-XXX*, 9P9005-XXX*, 9P9006-XXX*, 9P9007-XXX*, 9P9008-XXX*, 9P9009-XXX*

CheetahX15 36LP drives, Model(s) 9T3004-XXX*, 9T3005-XXX*, 9T3006-XXX*, 9T3015-XXX*, 9T3016-XXX*, 9T4004-XXX*, 9T4005-XXX*, 9T4006-XXX*, 9T4015-XXX*, 9T4016-XXX*

CheetahX15 73LP drives, Model(s) 9U8004-xxx*, 9U8005-xxx*, 9U8006-xxx*, 9U8007-xxx*, 9U9005-xxx*, 9U9006-xxx*, 9U9007-xxx*, 9W7004-xxx*, 9W7005-xxx*, 9W7006-xxx*

Constellation drives, Model(s) 9FY152-XXX*, 9FY156-XXX*, 9FY246-XXX*

Elite drives, Model(s) 705259XX#, 975001-XXX#, 975002-XXX#, 976001-XXX#, 976002-XXX#, 976003-XXX#, 976004-XXX#, 976005-XXX#, 976006-XXX#, 988001-XXX#, 990001-XXX#, 990002-XXX#, 990005-XXX#, 990006-XXX#, 990007-XXX#, 992001-XXX#, 992002-XXX#, 992003-XXX#, 992004-XXX#, 992005-XXX#, 992006-XXX#, 993001-XXX#, 9A7001-XXX#, 9A7002-XXX#, 9A7003-XXX#, 9A7004-XXX#, 9E3001-XXX#, 9E3003-XXX#, 9E3004-XXX#, 9K7001-XXX#, 9K8005-XXX#, 9K8006-XXX#, 9L8004-XXX#, 9L9004-XXX#

Hard Drive, Model(s) 9BM004-XXX, 9BX134-XXX*, 9BX144-XXX*, 9BX146-XXX*, 9BX14L-XXX, 9BX154-XXX*, 9BX156-XXX*, 9BX158-XXX*, 9BX15L-XXX, 9BZ134-XXX*, 9BZ146-XXX*, 9BZ148-XXX*, 9BZ156-XXX*, 9BZ158-XXX*, 9CA142-XXX*, 9CA144-XXX*, 9CA146-XXX*, 9CA148-XXX*, 9CA152-XXX*, 9CA154-XXX*, 9CA156-XXX*, 9CA158-XXX*, 9DM144-XXX*, 9DM146-XXX*, 9DM148-XXX*, 9DM154-XXX*, 9DM156-XXX*, 9DM158-XXX*, 9EF244-XXX, 9EF246-XXX, 9EF248-XXX, 9HD154-XXX, 9HD156-XXX, 9HD158-XXX*

Hard drives, Model(s) 9HX144-XXX, 9HX158-XXX, 9JF144-XXX, 9JF158-XXX

Maxtor Drives, Model(s) 9GT154-XXX, 9GT156-XXX, 9GT158-XXX

NL35 Series -400 Drives, Model(s) 9AT004-xxx*, 9AT007-xxx*

NL35FC Series, Model(s) 9Y8104-xxx*, 9Y8107-xxx*, 9Y8204-xxx*, 9Y8207-xxx*

Sabre disc drives, Model(s) 8HD Parallel-985001-OXX*, 9HD Parallel-974001-OXX*, Parallel-974001-OXX*

SAVVIO 10K.1, Model(s) 9F4066-XXX, 9F4166-XXX, 9F6066-XXX, 9Y4004-XXX, 9Y4006-XXX, 9Y4066-XXX, 9Y5004-XXX, 9Y5006-XXX, 9Y5066-XXX

SAVVIO 10K.3, Model(s) 9FJ066-XXX, 9FK066-XXX

SAVVIO 10K.3FDE, Model(s) 9LA066-XXX, 9LB066-XXX

SAVVIO 15K.1, Model(s) 9MA004-XXX, 9MB004-XXX, 9R9005-XXX*

SAVVIO 15K.1,, Model(s) 9MB066-XXX

SAVVIO 15K.2, Model(s) 9FT066-XXX, 9FU066-XXX, 9LC066-XXX, 9LD066-XXX

- X or x represents any number from 0 through 9.

License ID 8-01

* - XXX or xxx represents any alphanumeric character indicating changes in SELV circuits.

+ - Where x may be any letter or number.

Marking: Company name and model designation.
Last Updated on 2009-03-04

Questions? Notice of Disclaimer Page Top

Copyright © 2009 Underwriters Laboratories Inc.®

The appearance of a company's name or product in this database does not in itself assure that products so identified have been manufactured under UL's Follow-Up Service. Only those products bearing the UL Mark should be considered to be Listed and covered under UL's Follow-Up Service. Always look for the Mark on the product.

UL permits the reproduction of the material contained in the Online Certification Directory subject to the following conditions: 1. The Guide Information, Designs and/or Listings (files) must be presented in their entirety and in a non-misleading manner, without any manipulation of the data (or drawings). 2. The statement "Reprinted from the Online Certifications Directory with permission from Underwriters Laboratories Inc." must appear adjacent to the extracted material. In addition, the reprinted material must include a copyright notice in the following format: "Copyright © 2009 Underwriters Laboratories Inc.®"

An independent organization working for a safer world with integrity, precision and knowledge.

License ID 8-01

UL Certification for Teac Floppy Disk Drive

License ID 8-01

ONLINE CERTIFICATIONS DIRECTORY

NWGQ2.E75017
Information Technology Equipment Including Electrical Business Equipment - Component

Page Bottom

Information Technology Equipment Including Electrical Business Equipment - Component

See General Information for Information Technology Equipment Including Electrical Business Equipment - Component

TEAC CORP E75017
1-47 OCHIAI
TAMA-SHI, TOKYO 206-8530 JAPAN

CD-ROM drives, Model(s) CD-224E-RXX (c), CD-5010A

CD-RW/DVD multi drives, Model(s) DQ60, DV-W2xxS-xxx (*)

CD-RW/DVD-ROMs, Model(s) DW-224E-VXX *

DVD-R/RW, Model(s) DV-W5000X-YY

USB External CD-RW/DVD-ROM drives, Model(s) CDU-2xxxx (*), DVU-2xxxx (*), DVWU-2xxx (*), FPC95-1322-01, FPC95-1333-01, FPC95-1334-01, NWDVD010x (*), PACD0xxx (*), PADVD0xxx (*)

Component Dsg	Rated Input, V	Load Amps	Flame Rating	Laser Class
CD-Rewritable drives, "Raptor Red"				
CD-W2XXX*@	5dc	2.5	V-1	I
CD-Rewritable drives				
CD-RW4432A	5/12dc	0.54/0.642	V-1	I
CD-W5XXX*	5/12dc	0.54/0.642	V-1	I
VBT401248A@	5dc	2.5	V-1	I
CD-ROM drives				
CD-224E-NDS	5/3.3dc	1.5/0.18	V-1	I
CD-224E-NXX(c)	5dc	1.5	V-1	I
CD-2XXS-XXX (*)	5dc	1.5	V-1	I
CD-2XXXX(c)@	5dc	1.5	V-1	I
CD-3XXX(c)@	5dc	1.5	V-1	I
CD-5XXXX-U5*	5/12dc	1.5/-	V-1	I
CD2XXS-XXX (*)	5dc	1.5	V-1	I
WT32XSC-U5*	5/12dc	1.5/-	V-1	I

License ID 8-01

CD-RW/DVD multi drives				
DV-W2XXPXX	9/17dc	1.5/-	V-1	I
DV-W2XXSL*	5dc	1.5	V-1	I
DV-W2XXX	5dc	2.2	V-1	I
DV-W5XXX*	5/12dc	1.6/2.3	V-1	I
CD-RW/DVD-ROMs				
DW-224E-BXX *@	5dc	1.5	V-1	I
DW-224E-CXX*, DW-225-CXX*	5	1.5	V-1	I
DW-224E-RXX*	5dc	1.5	V-1	I
DW-225-BXX *@	5dc	1.5	V-1	I
DW-2XXSL*	5dc	1.5	V-1	I
DW-2XXSS-XXX, DV-2XXSS-XXX (*)				
	5dc	1.5	V-1	I
DW-2XXX*@	5dc	1.5	V-1	I
Data storage drives				
IS-635X	5/12dc	3.5/0.5	HB	N/A
DVD players (for building-in)				
DV-LCXXX (*)	5dc	1	-	I
DVD-ROM drives				
DV-1XXX*	5dc	1.5	V-1	I
DV-2XXS-XXX*	5dc	1.5	V-1	I
DV-2XXSL	5dc	1.5	V-1	I
DV-2XXX	5dc	1.5	V-1	I
DV-SC15X	5dc	1.5	V-1	I
DV-SXXX	5dc	1.5	V-1	I
DV-TN1XX*	5dc	1.5	V-1	I
DV-TXXX*@	5dc	1.5	V-1	I
DVEC-VX	5dc	1.5	V-1	I
DVSL-VX	5dc	1.5	V-1	I
DVD-ROM loaders				
DV-S2XX*	5dc	1.5	V-1	I
DV-SC2XX*	5dc	1.5	V-1	I
DV-SN1XX*	5dc	1.5	V-1	I
DV-SN2XX*	5dc	1.5	V-1	I
DVD-ROM/CD-RW Combo drives				
DW-2XXS-XXX*	5dc	1.5	V-1	I
Flash card readers				

License ID 8-01

CA-200, CAB-200	5dc	0.5	HB	-
CA-400	5dc	0.5	HB	-
Floppy disk drives				
FD-05XYYY(a), FD-005XYYY(a)				
	5dc	0.6	V-1	N/A
FD-235(d)	5dc	0.8	V-1	N/A
FD-235HS(e)	5dc	0.8	V-1	N/A
FD-235JS(e)	5dc	0.8	V-1	N/A
Pocket floppy disk drives				
FD-USB02SV, FD-05PXX, FD-05PUXX				
	5dc	0.5	HB	N/A
USB External CD-RW/DVD-ROM drives				
DVWU-2XXXX(f)	5dc	1.5	HB	I
DWU-2xxx (*)	5dc	1.5	HB	I
PACMB0xxx (*)	5dc	1.5	HB	I
PADVW0xxx (*)	5dc	1.5	HB	I

(a) - Where X is any letter except P or blank and Y is any letter or blank. May be suffixed with S, followed by additional numbers and suffixed with U.

(c) - Where X is any alphanumeric character or blank, except P.

(d) - May be followed by F, G, HF, HG, H, GF or J, may be followed by alphanumeric characters, followed by U or U5 (If suffixed with U5 the bezel material is rated 5V).

(e) - May be followed by alphanumeric characters, followed by U or U5 (If suffixed with U5 the bezel material is rated 5V).

(f) - Where X is any alphanumeric character.

* - Where X represents any alphanumeric character or blank.

@ - Bezel is optional.

Marking: Company name or tradename "E75017" and model designation.
Last Updated on 2009-05-01

Questions? Notice of Disclaimer Page Top

Copyright © 2009 Underwriters Laboratories Inc.®

The appearance of a company's name or product in this database does not in itself assure that products so identified have been manufactured under UL's Follow-Up Service. Only those products bearing the UL Mark should be considered to be Listed and covered under UL's Follow-Up Service. Always look for the Mark on the product.

UL permits the reproduction of the material contained in the Online Certification Directory subject to the following conditions: 1. The Guide Information, Designs and/or Listings (files) must be presented in their entirety and in a non-misleading manner, without any manipulation of the data (or drawings). 2. The statement "Reprinted from the Online Certifications Directory with permission from Underwriters Laboratories Inc." must appear adjacent to the extracted material. In addition, the reprinted material must include a copyright notice in the following format: "Copyright © 2009 Underwriters Laboratories Inc.®"

License ID 8-01

An independent organization working for a safer world with integrity, precision and knowledge.

License ID 8-01

Component License for Panasonic CD/DVD Drive

License ID 8-01

Zertifikat *Certificate*

TÜV

Zertifikat Nr. *Certificate No.*
R 2051272

Blatt *Page*
25

Ihr Zeichen *Client Reference*	**Unser Zeichen** *Our Reference*	**Ausstellungsdatum**	*Date of Issue (day/mo/yr)*
PCDK-06-T013	ZK-MTE- 02062504 012	15.12.2006	

Genehmigungsinhaber *License Holder*
Panasonic Communications Co.,Ltd.
1080 Takano Nagomi-machi
Tamana-gun, Kumamoto
865-0193 JAPAN

Fertigungsstätte *Manufacturing Plant*
Panasonic Communications Co.,Ltd.
1080 Takano Nagomi-machi
Tamana-gun, Kumamoto
865-0193 JAPAN

Prüfzeichen *Test Mark*
TÜV Rheinland Product Safety — BAUART GEPRÜFT / TYPE APPROVED

Geprüft nach *Tested acc. to*
EN 60950-1:2001+A11
EN 60825-1:1994+A1+A2

Zertifiziertes Produkt *Certified Product* (Geräteidentifikation) *(Product Identification)*	**Lizenzentgelte - Einheit** *License Fee - Unit*
Plattenspeicher DVD-ROM & CD-R/RW Drive	
Additions	
Test Requirement : EN 60950-1/A11:2004	
Type Designation : UJDA780	1
Remark : The labelling requirements acc. to EU Directive 2001/95 have to be observed for distribution within the EEA.	
Change	
Address of License Holder and Factory : Panasonic Communications Co.,Ltd. 1080 Takano, Kikusui-machi Tamana-gun, Kumamoto 865-0193 Japan	
changed to : (see above)	1

TÜV Rheinland Product Safety GmbH — TÜV Rheinland — Zertifizierungsstelle

Dem Zertifikat liegt unsere Prüf- und Zertifizierungsordnung zugrunde. Das Produkt entspricht den o.g. Anforderungen, die Herstellung wird überwacht. This certificate is based on our Testing and Certification Regulation. The product fulfills above-mentioned-requirements, the production is subject to surveillance.

Zertifizierungsstelle

TÜV Rheinland Product Safety GmbH, Am Grauen Stein, D-51105 Köln

Tel.:(+49/221)8 06 - 13 71 Fax:(+49/221)8 06 - 39 35 e-mail: Althoff@de.tuv.com

Dipl.-Ing. M. Geiser